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PHYSICAL, CHEMICAL, AND PRODUCTIVITY DATA FROM AN INVESTIGATION--ETC(U)

FEB 71 F A RICHARDS, R C OUGDALE, M L HEALY NONR-477(37)

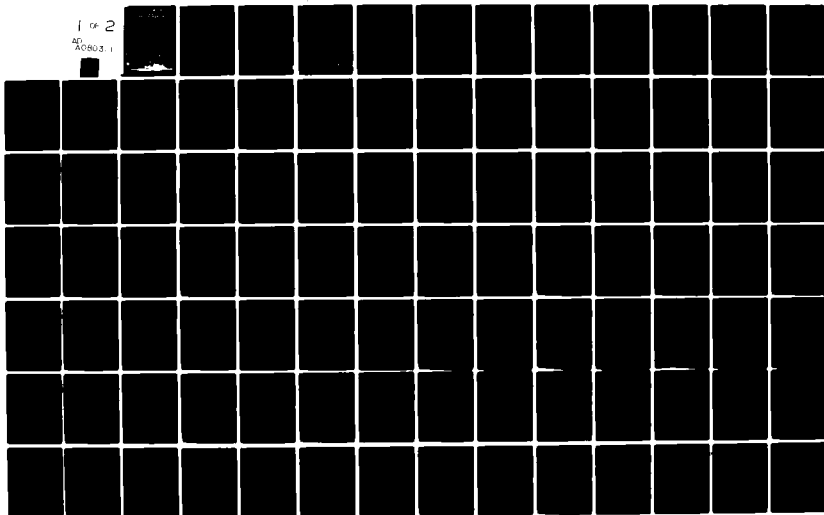
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6 PHYSICAL, CHEMICAL, AND PRODUCTIVITY DATA FROM AN INVESTIGATION  
OF THE NORTHEASTERN TROPICAL PACIFIC OCEAN.

RV Thomas G. Thompson Cruise 026 (PONCHO):

3 January - 14 March 1968

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## ABSTRACT

This report contains the tabulated physical, chemical, and biological data obtained in the northeastern tropical Pacific Ocean during January, February, and March 1968 during Cruise 026 of RV *Thomas G. Thompson*. Designated PONCHO, the cruise was undertaken to investigate the effects of chemical properties on biological and physical processes in a nutrient rich area. The various observations, and methods of collection, and analyses are described.

## ACKNOWLEDGEMENTS

Special thanks are given to Mr. James J. Anderson for editing the hydrographic data, to Mrs. Jane MacIsaac Dugdale for editing the biological data and narrative, and to Mr. Don Doyle for his help in the compilation of this report.

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## INTRODUCTION

The PONCHO Cruise was planned to extend the investigations by the Chemical Oceanography group of the chemistry of low-oxygen environments into oceanic waters and to continue studies on nutrient circulation and productivity relationships in the Northeast Tropical Pacific Ocean. The area chosen for the investigations, the waters off Mexico and Central America, is characterized by an extensive layer of low-oxygen water and a wide range in primary productivity levels. The cruise track, Figure 1, was determined by the requirements of the five major projects: (1) Chemistry of Rising Waters, (2) Chemistry of Trench Waters, (3) Chemistry of Oxygen-Deficient Waters, (4) Origin and Fate of Secondary Nitrite Peak and (5) Nutrient-Productivity Studies. The Costa Rica Dome was studied intensively as a region of upwelling, the Mexico Trench was sampled frequently, sections were made south of Acapulco to identify and follow the development of the low-oxygen and core of high-nitrite water, and productivity measurements were made once daily.

The cruise track was made up of four legs, each terminating at a port. The ranges of each leg are outlined below.

CRUISE LEG	DATES	FULL STATIONS	STD STATIONS	TOTAL MILES
Seattle-Acapulco	3 Jan - 17 Jan	9	5	2670
Acapulco-Puntarenas	20 Jan - 6 Feb	31		2288
Puntarenas-Acapulco	10 Feb - 27 Feb	35		2903
Acapulco-Seattle	1 Mar - 14 Mar	3	5	2660

Emphasis was placed upon rapid reduction and analysis of the cruise data, and extensive use was made of the shipboard IBM 1130 Computer

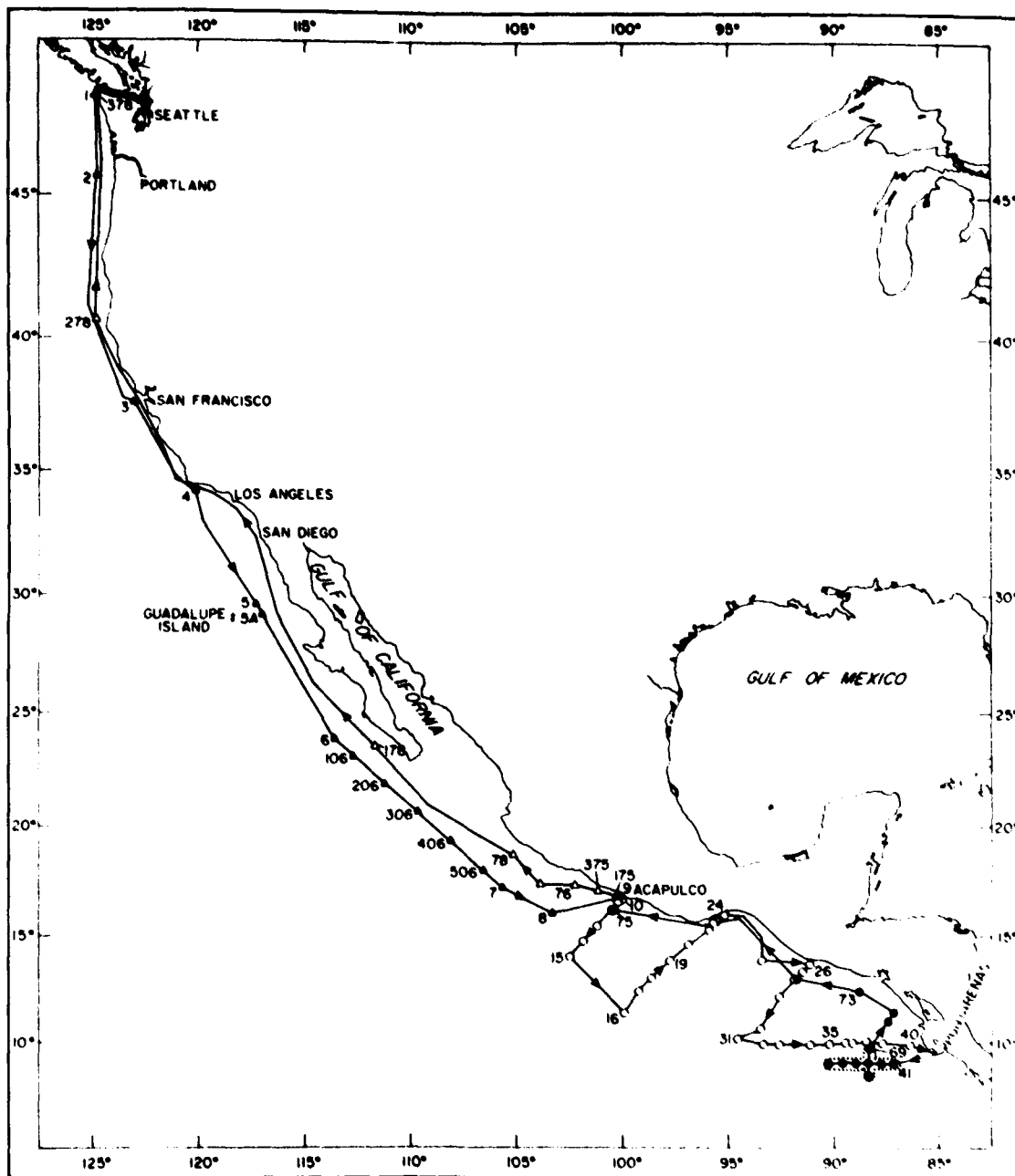


Fig. 1. Thomas G. Thompson Cruise 026, 3 January - 11 March 1968.  
( $\Delta$  - Leg I,  $\circ$  - Leg II,  $\bullet$  - Leg III,  $\triangle$  - Leg IV.)

and Calcomp plotter. A short course in Fortran programming was conducted on Leg 1 and considerable programming was accomplished onboard by the computer staff and scientific personnel. Routine calculations and a preliminary Chemistry Edit List of the variables measured were made with the computer, usually within 6-12 hours after the end of a station. In addition to this printed output, vertical plots of selected variables and sections were produced on the plotter. Paper tapes punched during routine lowerings of the Bisset-Berman STD unit were read, listed, and plotted by computer.

#### METHODS

Hydrographic casts were made using 5-liter plastic Niskin bottles equipped with reversing thermometers. Large volume samples were collected with 50-liter Pheobe bottles made of P.V.C. and with a 60-liter teflon-lined Bodman sampler made of metal. Sampling depths were determined from wire angle and unprotected reversing thermometer readings. Standard water drawing procedures were used for all chemical samples except pH and micro- $O_2$ . pH samples were collected in citrate bottles normally used for salinity. The water was drawn using Winkler oxygen procedure except that  $CO_2$  samples were sealed with a small bubble to allow for water expansion. Micro- $O_2$  samples were drawn first using a 25 ml syringe to reduce  $O_2$  contamination. A listing of analytical methods, all performed at sea, and their references follows.

A number of parameters were determined routinely throughout the water column at every station. Salinity was measured with a Bissett-Berman STD and with the University of Washington salinometer (Paquette,

1958). Phosphate was determined by the method of Murphy and Riley (1962), and silicate by that of Mullin and Riley (1955). Nitrate, nitrite, and ammonia were analyzed respectively with the methods of Wood *et al.* (1967), Bendschneider and Robinson (1952) and Richards and Kletsch (1964) or for productivity work, Průchasková (1964).

In the oxygen-minimum zone, attention was devoted to careful definition of the zone by precise oxygen determinations. The dissolved oxygen content of waters containing less than 1 ml/l was determined colorimetrically according to the procedure of Broenkow and Cline (1968). In all other waters, the conventional Winkler analysis was used.

Total CO<sub>2</sub> was determined by gas chromatography, using a Fisher gas partitioner, Model 29 equipped with an external gas stripper modified from the design of Swinnerton *et al.* (1962). Alkalinity was measured by the technique of Strickland and Parsons (1968). pH was measured by an unpublished method.

The routine hydrographic data are on file at the National Oceanographic Data Center and at the University of Washington.



## EXPLANATION OF DATA TABLES

The information in the data tables was transcribed directly from IBM cards. The codes used to describe weather, sea conditions, etc., can be found in NODC Publication M-2 (National Oceanographic Data Center, 1964), and the abbreviations and column headings are described below.

### Abbreviations and Headings Used in Data Tables

DATE	Expressed as Greenwich day/month/year.
HOURL	Greenwich mean time to the nearest tenth of an hour of the messenger drop on the first cast
LAT LONG	Latitude and longitude in degrees and minutes; or in degrees, minutes, and tenths of minutes
BARO	In millibars (To obtain barometric pressure, add 900 if this number is above 50 and 1000 if below 50.)
TEMP DRY and TEMP WET	In degrees Celsius
REL HUMID	Relative humidity expressed in percent
WEATHER	State of present weather (Coded in accordance with WMO Code 4501). A preceding X has no significance except to avoid confusion with previously used two-digit codes.)
VISIBILITY	Range of visibility (WMO code 4300)
CLOUD TYPE	Cloud type (WMO code 0500)
CLOUD AMT	Amount of cloud cover (WMO code 2700)
WIND VELOC	Wind velocity in knots
WIND DIREC	Wind direction (from NODC Publication M-2)
WAVE DIREC	Direction from which dominant waves approached (from NODC Publication M-2)
WAVE HEIGHT	Height of dominant waves (WMO code 1555)

WAVE PERIOD	Period of dominant waves (WMO code 3155)
SECCHI	Depth in meters to which a 12-inch (30.5 cm) Secchi disk could be seen on daylight stations
SOUNDING	Depth of water in meters in the station as determined by the ship's echo sounder
CAST	Cast number
DEPTH	Depth in meters from which sample was obtained
TEMP	Temperature in degrees Celsius
SAL	Salinity in parts per thousand (‰)
SIGMA-T	An expression for the density of seawater at atmospheric pressure at the indicated temperature and salinity (To convert sigma-t values to density, divide by 1000 and add 1; thus, sigma-t 22.42 = density 1.02242)
02 (Dissolved oxygen)	
UGAT/L	In microgram-atoms per liter, by the Winkler method in the first column, and by the micro method in the second.
AOU	Apparent oxygen utilization in microgram-atoms per liter (µgm-atoms/liter)
SATN	Percent of oxygen saturation
PO4	Reactive phosphorus in microgram-atoms per liter (µg-atoms/liter)
NO3	Nitrate-nitrogen in microgram-atoms per liter (µg-atoms/liter)
SiO4	Reactive-silicate in microgram-atoms per liter (µg-atoms/liter)
NO2	Nitrite-nitrogen in microgram-atoms per liter (µg-atoms/liter)
pH	pH corrected for <i>in situ</i> temperature
ALK	Alkalinity in millequivalents per liter
NH3	Ammonia-nitrogen in microgram-atoms per liter (µg-atoms/liter)

CO2

Total carbon dioxide as determined directly  
by gas chromatography in millimoles per liter  
(mmole/liter)

\* AND ●

Indicate questionable values

# REFERENCES

- Bendschneider, K. and R. J. Robinson  
1952. A new spectrophotometric determination of nitrite in sea water. *J. Mar. Res.*, 24:446-449.
- Broenkow, W. W. and J. D. Cline  
1969. Colorimetric determination of dissolved oxygen at low concentrations. *Limnol. Oceanog.*, 14:450-454.
- Mullin, J. B. and J. P. Riley  
1955. A colorimetric determination of silicate with special reference to sea and natural waters. *Anal. Chim. Acta*, 12:162-176.
- Murphy, J. and J. P. Riley  
1962. A modified single solution method for the determination of phosphate in natural waters. *Anal. Chim. Acta*, 27L:31-36.
- Paquette, Robert G.  
1958. A modification of the Wenner-Smith Soule salinity bridge for the determination of salinity in sea water. *Univ. Wash., Dept. Oceanog. Tech. Rept. No. 61, Ref M58-14.* 57 pp.
- Procházková, L.  
1964. Spectrophotometric determination of ammonia as rubazoic acid with bispyrazolone reagent. *Analyt. Chem.*, 36:865-871.
- Richards, F. A. and R. A. Kletsch  
1964. The spectrophotometric determination of ammonia in labile amino compounds in fresh and seawater by oxidation to nitrate, pp. 65-81. In Y. Miyake and J. Kayama [eds.], Ken Suguwara. Festival Volume, Recent researches in the fields of hydrosphere, atmosphere, and nuclear geochemistry. Maruzen Co., Tokyo 404 p.
- Strickland, J. D. H. and T. R. Parsons  
1968. A practical handbook of seawater analysis. *Fish. Res. Bd. of Canada, Bull.* 167
- Swinerton, J. W., V. J. Linnenbom, and Ch. H. Cheek  
1962. Determination of dissolved gases in aqueous solution by gas chromatography. *Anal. Chem.* 34:483-485.
- Wood, E. D., F. A. J. Armstrong, and F. A. Richards  
1967. Determination of nitrate in sea water by cadmium-copper reduction to nitrite. *J. Marine Biol. Assoc. U. K.*, 47:23-31.

PHYSICAL AND CHEMICAL DATA

T G THOMPSON CRUISE 026				STATION 002				OBSERVED VALUES				WAVE PERIOD 2			
DATE	05/01/68	BARO	1030.4	WEATHER	X1	WIND VELOC	14	SECCHI	13	WAVE PERIOD	2	NO3	NO2	PH	
HOUR	17.08	TEMP DRY	9.2	VISIBILITY	8	WIND DIREC	03	SOUNDING	650	NO4	NO3	NO2	PH		
LAT	45-33.5N	TEMP WET	7.7	CLOUD TYPE	8	WAVE DIREC	34			UGAT/L	UGAT/L	UGAT/L	UGAT/L		
LONG	124-45.5W	REL HUMID	82	CLOUD AMT	2	WAVE HEIGHT	4			UGAT/L	UGAT/L	UGAT/L	UGAT/L		
CAST	DEPTH	TEMP DEG.C	SAL	SIGMAT	O2	UGAT/L	O2	UGAT/L	0/0 O2 SATN	ACU	UGAT/L	NO3	NO2	PH	
1	3	9.43	32.415	25.05	567	567	567	567	101	-2	0.81	10.42	7.61		
1	10	9.43	32.413	25.05	566	566	566	566	100	-1	0.78	9.54	7.61		
1	25	9.38	32.420	25.06	567	567	567	567	100	-2	0.68	6.65	3.91		
1	100	8.38	32.499	25.28	302	302	302	302	52	276	1.83	32.50	25.00		
1	251	6.65	33.677	26.45	198	198	198	198	33	399	2.29	51.45	28.78		

DATE 07/01/69  
 HOUR 22:2  
 LAT 37-32.5N  
 LONG 122-56.0W

T G THOMPSON CRUISE 026 STATION 003 OBSERVED VALUES  
 BARO DRY 1023.5 WEATHER X1  
 TEMP WET 8.9 VISIBILITY 7  
 REL HUMID 7.7 CLOUD TYPE 2  
 85 CLOUD AMT 2

WAVE PERIOD 2  
 SECCHI 17  
 SOUNDING 100

CAST	DEPTH	TEMP DEG.C	SAL O/00	SIGMAT	O2 UGAT/L	O2 UGAT/L	AOU UGAT/L	O/O O2 SATN	PO4 UGAT/L	SI04 UGAT/L	NO3 UGAT/L	NO2 UGAT/L	PH
1	1	11.84	33.417	25.41	530	1	1	100	0.58	5.65	4.83		8.37
1	10	11.80	33.423	25.42	531	1	1	100	0.60	6.27	4.83		8.37
1	11	11.82	33.422	25.42	532	0	0	100	0.60	6.78	4.92		8.36
1	59	10.39	33.600	25.81	349	199	199	64	1.54	21.71	18.07		8.27
1	89	9.75	33.699	26.00	314	241	241	57	1.62	25.98	20.97		8.15

OBSERVED VALUES

STATION 003

CRUISE 026

T G THOMPSON

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	1		2.38	
1	10		2.36	
1	11		2.39	
1	59		2.38	
1	89		2.44	



T G THOMPSON CRUISE 026				STATION 004				OBSERVED VALUES				WAVE PERIOD 2 SECCHI SOUNDING 571			
DATE	09/01/68	BARO	1020.0	WEATHER	X2	WIND VELOC	02	WIND DIREC	09	WIND DIREC	03	WAVE HEIGHT	03	WAVE HEIGHT	
HOUR	2.1	TEMP DRY	12.9	VISIBILITY	7	WIND DIREC	03	WAVE HEIGHT	03	WAVE HEIGHT	03	WAVE HEIGHT	03	WAVE HEIGHT	
LAT	34-13.3N	TEMP WET	10.8	CLOUD TYPE	7	WAVE HEIGHT	03	WAVE HEIGHT	03	WAVE HEIGHT	03	WAVE HEIGHT	03	WAVE HEIGHT	
LONG	120-32.6W	REL HUMID	77	CLOUD AMT	7	WAVE HEIGHT	03	WAVE HEIGHT	03	WAVE HEIGHT	03	WAVE HEIGHT	03	WAVE HEIGHT	
CAST	DEPTH	TEMP DEG.C	SAL 0/00	SIGMAT	O2 UGAT/L	O2 UGAT/L	ACU UGAT/L	O/O O2 SATN	PO4 UGAT/L	SI04 UGAT/L	NO3 UGAT/L	NO2 UGAT/L	PH		
1	1	13.51	33.386	25.06	554	-40	108	0.35	2.76	0.79	0.05	8.39			
1	25	13.22	33.383	25.12	521	-4	101	0.51	3.39	1.73	0.12	8.37			
1	26	13.22	33.385	25.12	520	-4	101	0.45	3.01	1.52	0.12				
1	76	10.88	33.492	25.64	387	154	72	2.40	14.56	14.13	0.03				
1	151	9.82	33.894	26.13	261	293	47	1.95	27.86	21.70	0.02	8.05			
1	152	9.81	33.888	26.14	265	289	48	1.86	27.74	21.91	0.02				
1	302	8.00	34.158	26.63	103	473	18	2.73	54.84	31.41	0.02				
1	503	6.44	34.250	26.92	19	578	3	3.48	101.03	26.67	0.01	7.75			
1	568	6.39	34.253	26.93	31	567	5	3.90	119.73	16.66	0.02	7.72			
1	569	6.40	34.256	26.94	14	583	2	4.02	118.85	16.83	0.02				

T G THOMPSON CRUISE 026 STATION 004 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	1		2.38	
1	25		2.28	
1	26			
1	76			
1	151		2.38	
1	152			
1	302	0.00		
1	503	0.06	2.47	
1	568	1.06	2.47	
1	569	0.31		

DATE 10/01/68 TIME 17:03 LAT 29-32.0N LONG 117-16.0W		Y G THOMPSON CRUISE 026				STATION 005				OBSERVED VALUES				WAVE PERIOD 3 SECCHI 34 SOUNDING 519				PH
DATE	TIME	TEMP	SAL	SIGMAT	WEATHER	VISIBILITY	CLOUD TYPE	CLOUD AMT	WIND VELOC	WIND DIRECTION	WAVE HEIGHT	PO4	NO3	NO2	PH			
1	1	16.62	33.605	24.55	500	503	503	500	-17	104	104	0.31	0.00	0.01	8.40			
1	10	16.62	33.601	24.55	503	503	503	500	-20	104	104	0.26	0.07	0.00	8.43			
1	20	16.64	33.603	24.55	503	503	503	500	-21	105	105	0.24	0.00	0.00	8.40			
1	40	16.60	33.594	24.55	500	500	500	500	-18	104	104	0.25	0.02	0.00	8.40			
1	70	14.85	33.410	24.80	516	461	278	154	-16	103	86	0.37	0.52	0.07	8.38			
1	101	11.50	33.333	25.41	278	278	278	154	74	49	294	0.90	8.68	0.02	8.30			
1	201	9.03	34.151	26.47	278	278	278	154	294	49	294	1.84	26.93	0.00	6.07			
1	302	7.64	34.148	26.68	154	154	154	154	427	26	26	2.49	31.98	0.00	7.94			
1	403	6.74	34.333	27.02	29	29	29	29	571	5	5	3.12	41.43	0.00	7.78			
1	514	6.25	34.333	27.02	29	29	29	29	571	5	5	3.12	41.43	0.00	7.78			

		T G THOMPSON		CRUISE 026	STATION 005	OBSERVED VALUES
CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L		
1	1	0.93				
1	10	0.81				
1	20	0.15				
1	40	0.40				
1	70	0.58				
1	101	0.37				
1	201	1.01				
1	302	0.11				
1	403					
1	514	0.13				



T G THOMPSON CRUISE 026 STATION 006 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	1	0.75		
1	10	0.39		
1	25	0.15		
1	76	0.00		
1	604	0.00		

DATE 15/01/68 HOUR 17-08-00N LONG 105-39.0W	T G THOMPSON	CRUISE 026	STATION 007										OBSERVED VALUES									
			BARO 1012.4 TEMP DRY 24.0 TEMP WET 21.7 REL HUMID 82			WEATHER X1 VISIBILITY 9 CLOUD TYPE 8 CLOUD AMT 3			O2 UGAT/L		O2 UGAT/L		O/O O2 SATN		AQW UGAT/L		WIND VELOC 05 WIND DIREC 01 WAVE DIREC 30 WAVE HEIGHT 3		WAVE PERIOD 12 SECCHI 11 SOUNDING 3164			
CAST	DEPTH	TEMP DEG.C	SAL O/00	SIGMAT	O2 UGAT/L	O2 UGAT/L	O2 UGAT/L	O2 UGAT/L	O/O O2 SATN	AQW UGAT/L	O/O O2 SATN	P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L	PH						
1	0	26.13	34.008	22.27	416	416			102	-7	102	0.26	0.88	0.75	0.22	8.28						
1	10	26.10	34.014	22.28	414	414			102	-5	102	0.23	0.88	0.14	0.11							
1	11	26.09																				
1	25	26.11	34.009	22.27	417	417			102	-8	102	0.17	0.63	2.50	0.15	8.27						
1	50		34.277		425	425						0.28	1.25	2.05	0.05							
1	75	19.48	34.344	24.42	324	114.96			71	131		0.87	5.52	5.27	0.79							
1	100	15.70	34.461	25.42	111	78.41			23	376		1.98	17.32	21.61	0.07	7.67						
1	101	15.56																				
1	150	12.96	34.776	26.25	16	0.34			3	497		2.60	29.24	25.38	1.49							
1	201	12.03	34.784	26.43	11	0.85			2	513		2.64	33.51	23.50	2.58	7.77						
2	246	11.48	34.761	26.52	21	1.19			4	509		2.70	35.64	22.93	2.35	7.70						
2	294	10.68	34.714	26.63	18	0.51			3	521		2.86	40.41	23.47	1.63	7.67						
2	394	9.10	34.624	26.83	15	1.02			3	545		3.07	52.46	27.92	0.62	7.67						
2	495	7.79	34.572	26.99	9	1.19			2	568		3.26	65.89	32.51	0.44	7.62						
2	594	6.80	34.551	27.11	21	1.61			4	569		3.36	74.17	36.57	0.07	7.60						
2	795	5.45	34.533	27.27	13	2.63			2	597		3.43	92.37	41.88	0.01							
2	997	4.39	34.561	27.42	50	18.70			8	576		3.50	107.55	43.77	0.01							
2	1199	3.75	34.580	27.50	54	41.44			8	583		3.32	122.99	43.65	0.01							
2	1404	3.21	34.595	27.56	89				14	557		3.29	128.39	41.47	0.00	7.67						
2	1706	2.59	34.633	27.65	144				22	512		3.11	142.32	41.39	0.01							

T G THOMPSON		CRUISE 026		STATION 007		OBSERVED VALUES	
CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L			
1	0	0.00	2.46	2.01			
1	10	0.13					
1	11						
1	25	0.27	2.40	2.02			
1	50	0.48					
1	75	0.62					
1	100	0.26	2.42	2.31			
1	101						
1	150						
1	201		2.48	2.33			
2	246	0.00	2.43	2.41			
2	294		2.44	2.41			
2	394		2.44	2.49			
2	495	0.00	2.44	2.45			
2	594		2.44	2.48			
2	795	0.15					
2	997			2.52			
2	1199	0.01					
2	1404		2.49	2.54			
2	1706	0.15					



## T G THOMPSON CRUISE 026 STATION 008 OBSERVED VALUES

DATE 16/01/58  
HOUR 1304  
LAT 16-05.0N  
LONG 103-22.0WBARO 1012.5  
TEMP DRY 25.6  
TEMP WET 25.6  
REL HUMID 98WEATHER X1  
VISIBILITY 9  
CLOUD TYPE 0  
CLOUD AMT 1WIND VELOC 03  
WIND DIREC 05  
WAVE DIREC 34  
WAVE HEIGHT 2WAVE PERIOD 3  
SECHL 41  
SOUNDING 0

CAST	DEPTH	TEMP DEG.C	SAL O/100	SIGMAT	02 UGAT/L	02 UGAT/L	ACU UGAT/L	0/0 02 SATN	P04 UGAT/L	SIC4 UGAT/L	NO3 UGAT/L	NO2 UGAT/L	PH
2	0	27.81	33.989	21.72	413		-15	104	0.16	1.25	0.05	0.00	8.04
2	10	27.72	33.985	21.75	414		-15	104	0.16	0.75	0.00	0.05	
2	25	27.70	33.986	21.75	412		-14	104	0.15	0.75	0.07	0.02	8.03
2	50		34.264		418				0.19	1.38	0.03	0.01	
2	76	19.27	34.384	24.50	262	111.01	194	57	1.17	8.16	9.93	0.71	7.80
2	101	15.32	34.576	25.59	49	32.38	442	10	2.30	20.33	25.95	0.06	7.53
2	151	12.82	34.796	26.29	11	0.89	504	2	2.59	29.24	25.52	2.02	
2	201	11.74	34.784	26.49	15	2.42	512	3	2.65	33.13	25.66	1.84	7.44
1	252	11.31	34.763	26.55	12	0.68	520	2	2.78	34.76	24.99	1.92	7.44
1	298	10.66	34.724	26.64	12	1.23	528	2	2.81	39.53	23.58	1.56	7.43
1	397	9.10	34.633	26.83	11	1.87	548	2	3.05	51.96	28.16	0.63	7.40
1	497	7.85	34.583	26.99	11	1.36	565	2	3.19	64.26	31.58	0.57	7.40
1	596	6.72	34.553	27.13	11	0.85	581	2	3.41	75.93	37.45	0.03	7.46
1	797	5.50	34.554	27.28	11	2.89	599	2	3.41	91.49	41.83	0.02	
1	1000	4.51	34.558	27.40	32	12.45	593	5	3.49	107.68	43.77	0.01	
1	1202	3.70	34.579	27.50	61	36.00	577	10	3.36	125.25	42.94	0.00	
1	1405	3.12	34.599	27.58	96		552	15	3.23	136.29	41.46	0.01	7.41
1	1707	2.59	34.626	27.64	148		508	23	3.08	145.58	41.38	0.01	

		T G THOMPSON		CRUISE 026		STATION 008		OBSERVED VALUES	
CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L					
2	0	0.63	2.38	2.14					
2	10	0.25							
2	25	0.29	2.38	2.12					
2	50	0.41	2.40	2.18					
2	76	0.00	2.40	2.37					
2	101	0.24	2.42	2.49					
2	151	0.00							
2	201	0.00	2.43	2.56					
1	252	0.00	2.43	2.53					
1	298	0.00	2.43	2.54					
1	397	0.03	2.43	2.60					
1	497	0.00	2.44	2.61					
1	596	0.00	2.52	2.64					
1	797	0.10							
1	1000	0.23		2.62					
1	1202	0.08							
1	1405	0.53	2.49	2.66					
1	1707	0.23							

DATE HOUR LAT LONG	17/12/68 1355 16-44.5N 100-09.2W	T G THOMPSON CRUISE 026				STATION 009				OBSERVED VALUES				WAVE PERIOD 2 SECCHI 33 SOUNDING 924			
		BARO	DRY	WET	REL HUMID	WEATHER	VISIBILITY	X0	WIND VELOC	WIND DIREC	WAVE DIREC	WAVE HEIGHT	WAVE PERIOD	SECCHI	SOUNDING	NO2	PH
CAST	DEPTH	TEMP DEG.C	SAL	SIGMAT	O2	UGAT/L	O2	UGAT/L	ACU	O2	UGAT/L	WIND VELOC	WIND DIREC	WAVE DIREC	WAVE HEIGHT	NO2	PH
1	0	27.61	34.091	21.86	414	UGAT/L	104	UGAT/L	-15	104	UGAT/L	0.25	2.76	0.00	0.00	0.00	0.00
1	48	20.09	34.47C	24.35	198	UGAT/L	44	UGAT/L	251	44	UGAT/L	1.45	11.42	0.78	0.78	0.78	0.78
1	95	14.25	34.847	26.03	17	UGAT/L	3	UGAT/L	493	3	UGAT/L	2.44	25.60	0.02	0.02	0.02	0.02
1	118		34.845		10	UGAT/L		UGAT/L			UGAT/L	2.43	27.48	0.02	0.02	0.02	0.02
1	141	12.90	34.836	26.30	16	UGAT/L	3	UGAT/L	493	3	UGAT/L	2.46	29.74	0.02	0.02	0.02	0.02
1	186	12.38	34.820	26.39	14	UGAT/L	3	UGAT/L	506	3	UGAT/L	2.45	30.37	0.23	0.23	0.23	0.23
1	234	11.97	34.815	26.49	14	UGAT/L	3	UGAT/L	511	3	UGAT/L	2.55	32.88	0.25	0.25	0.25	0.25
1	281	11.24	34.738	26.55	13	UGAT/L	2	UGAT/L	520	2	UGAT/L	2.63	35.89	0.89	0.89	0.89	0.89
1	376	10.34	34.718	26.69	12	UGAT/L	2	UGAT/L	532	2	UGAT/L	2.77	42.04	1.18	1.18	1.18	1.18
1	471	8.64	34.627	26.90	18	UGAT/L	3	UGAT/L	548	3	UGAT/L	3.04	57.48	0.89	0.89	0.89	0.89
1	869	4.80	34.559	27.37	28	UGAT/L	5	UGAT/L	592	5	UGAT/L	3.36	103.41	0.00	0.00	0.00	0.00

T G THOMPSON CRUISE 026 STATION: 009 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
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1	0	2.27		
1	48	0.17		
1	95	0.66		
1	118	0.22		
1	141	0.00		
1	186	0.09		
1	234	1.31		
1	281	0.09		
1	376	0.44		
1	471	0.44		
1	869	1.58		



DATE 21/01/68  
 HOUR 2.1  
 LAT 16-33.0N  
 LONG 100-10.5W

T G THOMPSON CRUISE 026 STATION 011 OBSERVED VALUES  
 BARO DRY 1011.2 WIND VELOC 10  
 TEMP WET 27.2 WIND DIREC 32  
 REL HUMID 25.2 WAVE DIREC 32  
 WAVE HEIGHT 1

CAST	DEPTH	TEMP DEGC	SAL O/00	SIGMAT	O2 UGAT/L	O2 UGAT/L	AQU UGAT/L	O/O O2 SAT/N	PO4 UGAT/L	SI04 UGAT/L	NO3 UGAT/L	NO2 UGAT/L	PH
1	0	28.14	34.004	21.62	414		-18	105	0.45	0.63	0.16	0.01	8.29
1	49	20.90	34.363	24.06	144		299	33	1.57	11.42	12.36	0.08	
1	99	14.78	34.824	25.90	17	3.23	478	3	2.62	23.97	29.46	0.04	7.78
1	149	12.86	34.841	26.32	18	1.27	496	4	2.48	28.24	30.07	0.27	
1	198	12.25	34.832	26.43	11	1.06	510	2	2.50	30.75	31.07	0.02	7.75
1	248	11.56	34.783	26.52	10	1.10	519	2	2.55	33.01	31.16	0.02	
1	299	10.75	34.739	26.64	15	1.02	524	3	2.71	37.90	27.49	1.18	7.71
1	401	9.35	34.661	26.82	11	0.89	545	2	3.23	49.82	26.74	1.17	7.73
1	501	8.06	34.597	26.97	5	3.02	568	1	3.11	63.00	30.91	0.78	
1	649	6.46	34.563	27.17	6	2.72	590	1	3.25	76.43	39.16	0.00	

T G THOMPSON CRUISE 026				STATION 012				OBSERVED VALUES				WAVE PERIOD 2			
DATE	TIME	BARO	TEMP	WIND	WIND	WIND	WIND	WAVE	WAVE	WAVE	WAVE	WAVE	WAVE	WAVE	
21/01/68	1012.0	1012.0	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	
16-18.0N	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
100-25.0W	80	80	80	80	80	80	80	80	80	80	80	80	80	80	
CST	DEPTH	TEMP	SAL	SIGMAT	O2	O2	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	
		DEGC	O/100		UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	
1	0	27.61	34.051	21.83	420	420	0.19	0.19	0.75	0.19	0.19	0.02	0.02	8.28	
1	50	18.78	34.531	24.74	138	138	1.61	1.61	11.92	18.54	18.54	0.84	0.84		
1	101	13.48	34.842	26.19	9	9	2.55	2.55	25.23	30.29	30.29	0.05	0.05	7.77	
1	151	12.71	34.845	26.35	9	9	2.50	2.50	27.61	31.93	31.93	0.01	0.01		
1	201	12.03	34.807	26.45	14	14	2.35	2.35	29.49	28.69	28.69	0.09	0.09	7.74	
1	252	11.47	34.778	26.54	9	9	2.39	2.39	32.88	28.80	28.80	0.07	0.07		
1	302	10.89	34.748	26.62	11	11	2.54	2.54	37.15	23.89	23.89	1.42	1.42	7.69	
1	403	9.59	34.666	26.78	11	11	2.92	2.92	46.81	24.12	24.12	1.06	1.06	7.68	
1	503	7.87	34.593	26.99	11	11	3.08	3.08	62.25	32.10	32.10	0.68	0.68		
1	655	6.57	34.565	27.16	9	9	3.98*	3.98*	75.17	37.69	37.69	0.13	0.13		
2	694	6.35	34.561	27.18	9	9	3.24	3.24	78.56	37.62	37.62	0.20	0.20	7.63	
2	794	5.65	34.557	27.27	9	9	3.33	3.33	86.72	41.18	41.18	0.00	0.00	7.62	
2	894	5.03	34.555	27.34	13	13	3.30	3.30	96.63	43.12	43.12	0.08	0.08	7.62	
2	994	4.61	34.555	27.39	27	27	3.32	3.32	102.28	45.53	45.53	0.06	0.06	7.62	

T G THOMPSON			CRUISE 026			STATION 013			OBSERVED VALUES			WAVE PERIOD 2		
DATE	21/01/68		BARO	1012.4		WEATHER	X1		WIND VELOC	02		SECCHI	33	
HOUR	1800		TEMP DRY	28.5		VISIBILITY	8		WIND DIREC	04		SOUNDING	3400	
LAT	15-26.00N		TEMP WET	25.8		CLOUD TYPE	0		WAVE DIREC	30				
LONG	101-09.00W		REL HUMID	81		CLOUD AMT	1		WAVE HEIGHT	31				
CST	DEPTH	TEMP DEG.C	SAL O/100	STGMAT	O2 UGAT/L	O2 UGAT/L	O2 UGAT/L	AGU UGAT/L	O/O O2 SATM	P04 UGAT/L	NO3 UGAT/L	NO2 UGAT/L	PH	
1	0	27.72	34.253	21.95	419			-21	106	0.15	0.20	0.01	8.30	
1	49	18.50	34.518	24.80	125			337	27	1.68	13.01	0.31	7.95	
1	97	13.50	34.827	26.18	4	0.08		504	1	2.48	25.98	1.09	7.76	
1	146	12.53	34.835	26.38	4	0.81		514	1	2.47	21.38*	0.14		
1	195	12.05	34.805	26.45	4	0.17		519	1	2.48	31.00	0.03	7.70	
1	243	11.57	34.785	25.52	4	0.21		525	1	2.54	33.13	0.08		
2	274	11.25	34.771	26.55	13	0.21		519	2	2.63	33.13	0.41	7.77	
2	368	10.14	34.699	26.71	15	0.25		531	3	2.86	43.05	1.12		
2	463	8.68	34.623	26.89	16	0.51		549	3	3.12	55.97	0.83	7.70	
2	557	7.48	34.581	27.04	7	0.00		574	1	3.19	65.39	0.71		
2	652	6.65	34.560	27.14	9	1.15		584	1	3.31	76.30	0.17		
2	748	5.91	34.549	27.23	11	0.81		592	2	3.35	82.20	0.00	7.65	
2	846	5.40	34.553	27.30	14	2.34		597	2	3.54	89.10	0.00		
2	945	4.81	34.558	27.37	18	7.31		603	3	3.41	97.89	0.00	7.72	



T G THOMPSON CRUISE 026 STATION 013 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.41	2.13
1	49		2.41	2.43
1	97		2.43	2.47
1	146			
1	195		2.42	2.55
1	243			
2	274		2.42	2.57
2	368			
2	463		2.44	2.61
2	557			
2	652			
2	748		2.44	2.67
2	846			
2	945		2.46	2.63

T G THOMPSON CRUISE 026				STATION 014				OBSERVED VALUES				WAVE PERIOD 2			
DATE	22/01/68	BARO	1011.5	WEATHER	X0	WIND VELOC	02	WIND DIRECTION	31	WAVE DIRECTION	31	WAVE PERIOD	2	WAVE PERIOD	2
TIME	18-46.00	TEMP DRY	27.3	VISIBILITY	8	WIND DIRECTION	31	WAVE DIRECTION	31	WAVE DIRECTION	31	WAVE PERIOD	2	WAVE PERIOD	2
LAT	18-46.00	TEMP WET	23.6	CLOUD TYPE	8	WAVE DIRECTION	31	WAVE DIRECTION	31	WAVE DIRECTION	31	WAVE PERIOD	2	WAVE PERIOD	2
LONG	101-49.00	REL HUMID	73	CLOUD AMT	9	WAVE HEIGHT	0	WAVE HEIGHT	0	WAVE HEIGHT	0	WAVE PERIOD	2	WAVE PERIOD	2
CST	DEPTH	TEMP	DEG.C	SAL	SIGMAT	02	UGAT/L	02	UGAT/L	AOU	0/0	02	UGAT/L	NO2	UGAT/L
1	0	28.65	33.950	0.00	21.42	412	-19	105	0.36	0.36	1.13	0.26	0.00	8.34	8.34
1	50	27.75	33.972	21.73	25.55	412	-13	104	0.17	0.17	1.38	0.77	0.03	8.34	8.34
1	101	16.03	34.733	26.24	26.43	5	0.93	1	2.52	2.52	21.08	30.40	0.15		
1	151	13.13	34.819	26.52	26.57	9	0.08	2	2.47	2.47	28.74	27.72	1.97		
1	201	12.21	34.823	26.57	26.69	4	0.55	1	2.69	2.69	30.87	30.86	0.24	7.80	7.80
1	252	11.61	34.786	26.69	26.92	4	1.02	1	2.57	2.57	33.51	29.57	0.69		
2	284	11.26	34.769	26.69	27.06	3	1.02	1	2.58	2.58	35.64	27.26	1.58	7.78	7.78
2	380	10.13	34.674	26.69	27.18	6	0.68	1	2.92	2.92	46.81	25.82	0.91		
2	477	8.47	34.609	26.69	27.26	4	0.55	1	3.24	3.24	59.24	30.20	0.78		
2	572	7.29	34.575	26.69	27.32	6	1.02	1	3.25	3.25	71.53	34.84	0.72		
2	669	6.33	34.552	26.69	27.37	4	1.74	1	3.35	3.35	78.44	40.76	0.00	7.69	7.69
2	767	5.71	34.552	26.69	27.37	1	2.12	0	3.45	3.45	87.22	41.01	0.00		
2	863	5.19	34.556	26.69	27.37	4	3.70	1	3.59	3.59	93.75	44.11	0.01		
2	960	4.77	34.556	26.69	27.37	11	8.50	2	3.65	3.65	100.27	45.05	0.00	7.71	7.71

DATE 22/01/68 13.6 14-03-00N 102-12.0W	T G THOMPSON	CRUISE 026	STATION 015				OBSERVED VALUES				WAVE PERIOD 2			
			BARO 1012.5	TEMP 27.2	DRY 24.3	WET 24.3	WIND 1012.5	DRY 27.2	WET 24.3	WIND 1012.5	DRY 27.2	WET 24.3	WIND 1012.5	DRY 27.2
CST	DEPTH	TEMP DEG.C	SAL O/100	SIGMAT	O2 UGAT/L	X0 UGAT/L	WIND UGAT/L	WIND UGAT/L	WIND UGAT/L	WIND UGAT/L	WIND UGAT/L	WIND UGAT/L	WIND UGAT/L	WIND UGAT/L
1	0	28.11	33.895	21.55	418	418	21	106	106	106	106	106	106	106
1	5	27.98	33.896	21.59	414	414	17	105	105	105	105	105	105	105
1	10	27.98	33.894	21.59	418	418	20	105	105	105	105	105	105	105
1	25	27.98	33.892	21.59										
1	50	27.95	33.889	21.60	408	408	11	103	103	103	103	103	103	103
1	60		33.825		354	354								
1	86	22.91	34.083	23.29	288	112.79*	141	67	67	67	67	67	67	67
1	111	20.38	34.270	24.12	218	127.67*	229	49	49	49	49	49	49	49
1	151	14.74	34.776	25.87	7	1.06	488	1	1	1	1	1	1	1
1	176		34.827		5									
1	201	12.63	34.838	26.36	15	0.98	502	3	3	3	3	3	3	3
2	206	12.60	34.832	26.36	16		502	3	3	3	3	3	3	3
2	228	12.23	34.816	26.42	14	0.17	507	3	3	3	3	3	3	3
2	251	12.00	34.803	26.45	12		512	2	2	2	2	2	2	2
2	274	11.73	34.794	26.50	10	0.17	517	2	2	2	2	2	2	2
2	297	11.53	34.776	26.52	9		520	2	2	2	2	2	2	2
2	321	11.25	34.762	26.56	11	0.21	522	2	2	2	2	2	2	2
2	345	10.76	34.737	26.63	11		528	2	2	2	2	2	2	2
2	367	10.35	34.712	26.69	14	1.02	529	3	3	3	3	3	3	3
2	414	9.46	34.662	26.80	21		533	4	4	4	4	4	4	4
2	461	8.66	34.623	26.90	13	0.98	552	2	2	2	2	2	2	2
3	582	7.16	34.567	27.08	12	0.42	574	2	2	2	2	2	2	2
3	675	6.32	34.553	27.18	16	0.85	582	3	3	3	3	3	3	3
3	771	5.68	34.547	27.26	16	1.57	592	3	3	3	3	3	3	3
3	865	5.21	34.545	27.31	16		598	3	3	3	3	3	3	3
3	960	4.67	34.553	27.38	35	12.96	587	6	6	6	6	6	6	6
3	1150	3.99	34.569	27.47	52	31.19	581	8	8	8	8	8	8	8
3	1441	3.17	34.551	27.57	97	68.51	550	15	15	15	15	15	15	15
3	1927	2.30	34.636	27.68	176		485	27	27	27	27	27	27	27
3	2936	1.87	34.666	27.74	228		441	34	34	34	34	34	34	34
3	3136	1.85	34.665	27.74	226		443	34	34	34	34	34	34	34

T G THOMPSON CRUISE 026 STATION 015 OBSERVED VALUES

CST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0	1.24	2.39	2.18
1	5	0.79		
1	10	0.72		
1	25	0.66	2.38	2.18
1	50	0.85	2.38	2.18
1	60	0.00		
1	86	0.47	2.36	2.35
1	111	0.38	2.44	2.40
1	151	0.52	2.44	2.56
1	176	0.16		
1	201	0.35	2.43	2.62
2	206	0.32		
2	228	0.28		
2	251	0.34		
2	274	0.94	2.43	2.59
2	297	0.44		
2	321	0.00		
2	345	0.00		
2	367	0.00	2.44	2.65
2	414	0.00		
2	461	0.07	2.46	2.70
3	582	0.43		
3	675	0.39		
3	771	0.63	2.48	2.72
3	865	0.66		
3	960	0.36	2.49	2.76
3	1150	0.90		
3	1441	0.65	2.51	2.80
3	1927	0.81		
3	2936	0.51	2.56	2.73
3	3136	0.20		

T G THOMPSON CRUISE 026				STATION 016				OBSERVED VALUES				WAVE PERIOD 2			
DATE	24/01/68	PARO	1011.9	WEATHER	X1	WIND VELOC	16	WIND DIREC	12	WAVE DIREC	09	SECCHI	04	WAVE PERIOD	2
HOUR	14.55	TEMP DRY	26.7	VISIBILITY	9	WAVE DIREC	12	WAVE DIREC	09	WAVE PERIOD	3200	SOUNDING	3200		
LAT	11-25.0N	TEMP WET	26.3	CLOUD TYPE	1	WAVE HEIGHT	3								
LONG	099-52.0W	REL HUMID	26.97	CLOUD AMT	2										
CST	DEPTH	TEMP DEG.C	SAL O/100	SIGMAT	O2 UGAT/L	O2 UGAT/L	AQU UGAT/L	O/O O2 SATN	P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L	PH		
1	0	25.53	33.974	22.43	465		-52	113	0.50	4.27	0.28	0.09	8.33		
1	10	25.50	33.973	22.44	468		-55	114	0.45	3.89	0.43	0.07	8.33		
1	20	24.01	34.115	22.99	408		13	97	0.75	2.89	5.83	0.54			
1	30	23.17	34.139	23.25	368		59	86	0.91	3.76	8.40	0.39	8.21		
1	40	22.92	34.177	23.35	313		115	73	0.98	4.27	9.66	0.30			
1	50		34.202		326				1.06	7.03	10.46	0.26			
1	76	14.46	34.813	25.96	10		488	2	2.40	23.84	30.37	0.14	7.80		
1	101	13.11	34.847	26.27	26		486	5	2.31	24.72	31.53	0.07			
1	126	12.78	34.853	26.34	29	14.79	486	6	2.35	25.60	33.29	0.12	7.83		
1	151	12.42	34.847	26.41	28	13.56	491	5	2.36	27.74	33.39	0.06			
2	193	11.93	34.809	26.47	25	14.02	500	5	2.42	29.74	33.41	0.00	7.80		
2	240	11.12	34.766	26.59	58	22.52	476	11	2.46	30.75	33.43	0.02			
2	286	10.72	34.747	26.65	41	12.62	498	8	2.61	34.76	33.37	0.08			
2	332	10.28	34.727	26.71	28	11.60	516	5	2.63	36.65	33.22	0.06			
2	379	9.78	34.696	26.77	25	3.95	526	5	2.77	41.04	33.03	0.04			
2	474	8.37	34.619	26.94	19	2.12	550	3	3.03	56.47	32.90	0.17	7.72		
2	571	7.31	34.595	27.08	14	0.93	570	2	3.20	67.27	35.74	0.27			
2	667	6.49	34.578	27.18	14	2.29	581	2	3.27	74.55	39.37	0.00			
2	764	5.71	34.562	27.26	20	3.23	587	3	3.39	86.47	45.14	0.03			
2	861	5.05	34.560	27.34	28	10.07	588	5	3.39	94.63	44.68	0.03	7.67		
2	989	4.70	34.578	27.40	38		584	6	3.40	99.65	45.31	0.11			

T R THOMPSON CRUISE 026 STATION 016 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0	2.15	2.40	2.10
1	10	1.28	2.37	2.13
1	20	1.21		
1	30	1.55	2.38	2.15
1	40	1.72		
1	50	2.15		
1	76	0.02	2.41	2.46
1	101	0.45		
1	126	0.70	2.42	2.47
1	151	0.74		
2	193	0.72	2.42	2.52
2	240	0.82		
2	286	0.81		
2	332	0.27		
2	379	0.64		
2	474	0.67	2.43	2.52
2	571	0.45		
2	667	0.40		
2	764	0.42		
2	861	0.56	2.47	2.62
2	989	0.50		

T G THOMPSON CRUISE 026				STATION: C17										OBSERVED VALUES									
DATE		25/01/68		BARO		1011.4		WEATHER		X1		WIND		VELOC		09		WAVE PERIOD		2			
HOUR		12-28.00		TEMP DRY		26.7		VISIBILITY		8		WIND		DIREC		06		SECCI		3054			
LONG		099-17.00		TEMP WET		23.8		CLOUD TYPE		1		WAVE		DIREC		03		SOUNDING		3054			
				REL HUMID		78		CLOUD AMT		9		WAVE		HEIGHT		02							
CAST	DEPTH	TEMP DEG.C	SAL O/00	SIGMAT	O2 UGAT/L	O2 UGAT/L	AOU UGAT/L	O/O	O2 SATN	P04 UGAT/L	S104 UGAT/L	NO3 UGAT/L	NO2 UGAT/L	PH									
1	0	27.02	34.178	22.11	423		-21	105		0.41	1.13	0.39	0.08	8.31									
1	10	26.92	34.167	22.14	422		-19	105		0.62	0.63	0.53	0.05	8.31									
1	20	26.64	34.138	22.21	425		-20	105		0.38	0.38	0.11	0.06										
1	30	26.38	34.146	22.29	425		-19	105		0.35	1.63	1.11	0.19	8.30									
1	40	26.09	34.127	22.37	416		-8	102		0.43	1.38	2.17	0.27										
1	50		34.120		418					0.51	1.38	2.33	0.41										
1	75	23.05	34.112	23.27	309		119	72		1.67	7.40	12.71	0.49	8.13									
1	100	14.28	34.902	25.99	24		476	5		2.40	23.34	31.10	0.08										
1	125	13.40	34.859	26.22	26		482	5		2.34	23.84	31.16	0.02	7.85									
1	150	12.87	34.850	26.32	20		494	4		2.35	25.60	31.46	0.01										
2	196	12.42	34.829	26.39	14		505	3		2.39	28.11	31.51	0.01	7.84									
2	246	11.81	34.799	26.49	42		484	8		2.45	30.75	31.42	0.01										
2	295	11.22	34.766	26.57	28		505	5		2.63	31.88	32.81	0.01	7.79									
2	344	10.58	34.731	26.66	29		512	5		2.83	32.50	32.89	0.01										
2	393	10.10	34.705	26.72	16		531	3		2.84	39.28	32.02	0.00										
2	492	8.52	34.618	26.92	15		552	3		3.18	50.45	32.32	0.29	7.72									
2	591	7.42	34.589	27.06	13		569	2		3.40	66.01	34.21	0.76										
2	691	6.60	34.564	27.15	15		579	3		3.41	73.42	37.00	0.02										
2	791	5.91	34.556	27.23	13		590	2		3.46	83.71	42.57	0.00										
2	991	4.56	34.558	27.40	18		607	3		3.51	105.42	45.63	0.00	7.79									

T G THOMPSON CRUISE 026				STATION 018				OBSERVED VALUES				WAVE PERIOD 29			
DATE	25/01/68	BARO	1010.1	WEATHER	x1	WIND VELOC	09	WIND DIREC	12	WAVE PERIOD	29	SECCHI	3292		
LAT	14.4	TEMP DRY	28.6	VISIBILITY	8	WAVE DIREC	08	WAVE DIREC	08						
LONG	098-32.0W	TEMP WET	26.4	CLOUD TYPE	1	WAVE HEIGHT	3								
		REL HUMID	84	CLOUD AMT	2										
CST	DEPTH	TEMP	SAL	SIGMAT	O2	UGAT/L	O2	UGAT/L	AQU	0/0	O2	UGAT/L	P04	S104	PH
		DEG.C	0/00		UGAT/L		UGAT/L		UGAT/L	SATN		UGAT/L	UGAT/L	UGAT/L	
1	0	28.41	34.077	21.59	412				-18	105		0.19	0.49	1.88	8.32
1	10	28.18	34.076	21.66	408				-12	103		0.38	0.20	0.88	
1	20	28.16	34.092	21.68	415				-20	105		1.11	0.16	1.25	
1	30	27.79	34.216	21.89	412				-14	104		0.57	0.33	2.01	8.32
1	40	25.65	34.046	22.45	368				42	90		3.93	0.64	2.64	
1	50		34.129		251							12.97	1.19	7.53	
1	75	16.55	34.665	25.38	36	23.88			442	8		28.54	2.37	20.08	7.82
1	101	13.75	34.840	26.13	14	1.78			491	3		29.74	2.54	25.48	
1	126	13.38	34.856	26.22	11	2.00			498	2		30.34	2.52	26.48	7.79
1	151	13.14	34.862	26.28	14	1.70			497	3		31.57	2.42	27.11	
2	214	11.97	34.800	26.46	9	3.06*			515	2		32.80	2.54	30.75	7.76
2	263	11.45	34.779	26.54	21	1.23			509	4		31.11	2.63	33.01	
2	312	10.65	34.732	26.65	14	1.66			525	3		25.92	2.80	39.16	7.70
2	362	9.91	34.688	26.74	15	1.87			534	3		25.74	2.90	44.30	
2	411	9.07	34.647	26.85	14	1.74			545	3		27.22	3.00	51.33	
2	510	7.68	34.593	27.02	14	1.19			565	2		31.86	3.24	64.26	7.68
2	610	6.71	34.570	27.14	11	2.59*			581	2		37.75	3.29	71.28	
2	710	6.00	34.561	27.23	18	1.40			584	3		41.22	3.42	80.07	
2	810	5.43	34.556	27.29	17	2.51			594	3		43.48	3.44	88.23	
2	1011	4.45	34.567	27.42	32	21.33			593	5		44.91	3.46	102.16	7.71



T G THOMPSON CRUISE 026 STATION 018 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0	1.62	2.43	2.06
1	10	0.77	2.42	
1	20	1.16		
1	30	0.55		2.17
1	40	1.58		
1	50	0.91		2.35
1	75	2.09	2.28	2.55
1	101	0.74		
1	126	0.75	2.39	2.54
1	151	0.39		
2	214	0.31	2.38	2.47
2	263	0.24		
2	312	0.00	2.38	2.54
2	362	0.46		
2	411	0.32		
2	510	0.28	2.39	2.59
2	610	0.14		
2	710	0.45		
2	810	0.14		
2	1011	0.01	2.43	2.50

T G THOMPSON CRUISE 026				STATION 019				OBSERVED VALUES			
DATE 26/01/69 HOUR 13-52.0N LAT 97-45.0W	DEPTH	TEMP DEG.C	SAL O/DO	SIGMAT	WEATHER		X2		WIND VELOC		03
					02	UGAT/L	02	UGAT/L	WIND DIREC	10	
CAST						CLOUD	AMT	9	WAVE	DIREC	03
1	0	26.17	34.131	22.35	412				-4	101	
1	10	25.86	34.131	22.44	415				-5	102	
1	19	25.35	34.138	22.61	415				-2	101	
1	29	24.96	34.141	22.73	414				1	100	
1	39	24.47	34.161	22.89	412				6	98	
1	48		34.180		356						
1	72	21.37	34.282	23.87	310				129	71	
1	96	19.56	34.429	24.46	237				217	52	
1	120	16.28	34.665	25.45	235				246	49	
1	144	13.30	34.869	26.25				8.71	501	2	
2	191	12.70	34.844	26.35	15			4.84	501	3	
2	236	12.07	34.808	26.45	14			4.93	509	3	
2	279	11.39	34.768	26.54	13			3.82	518	2	
2	322	10.78	34.739	26.63	14			2.12	524	3	
2	368	10.23	34.714	26.71	13			1.91	532	2	
2	459	8.63	34.620	26.91	12			1.23	553	2	
2	552	7.48	34.578	27.04	9			1.74	572	2	
2	645	6.72	34.566	27.14	8			1.36	584	1	
2	744	6.01	34.554	27.22	15			2.59	587	3	
2	938	4.98	34.557	27.35	18			7.35	600	3	



Y G THOMPSON CRUISE 026 STATION 020 OBSERVED VALUES

CST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0	3.07	2.44	2.12
1	10	1.10		
1	20	1.91		
1	29	1.46	2.38	2.19
1	39	0.97		
1	49	1.97	2.41	2.21
1	74	0.87	2.38	2.24
1	98	0.57		
1	123	1.26	2.40	2.34
1	147	0.37		
2	180	0.13	2.41	2.46
2	222	0.06		
2	262	0.13	2.41	2.51
2	306	0.08		
2	351	0.20		
2	437	0.55	2.43	2.57
2	529	0.00		
2	623	0.00		
2	720	0.00		
2	921	0.27	2.46	2.64

T G THOMPSON CRUISE 026				STATION 021				OBSERVED VALUES				WAVE PERIOD 05			
DATE 26/01/68				WEATHER X1				WIND VELOC 05				SECH 07			
TIME 23.5				VISIBILITY 8				WIND DIREC 10				SOUNDING 4850			
LAT 15-16.0N				CLOUD TYPE 8				WAVE DIREC 10							
LONG 095-55.0W				CLOUD AMT 1				WAVE HEIGHT 2							
CAST	DEPTH	TEMP DEG.C	SAL O/00	SIGMAT	O2		AOU UGAT/L	O/O O2 SATN		P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L	PH	
					UGAT/L	UGAT/L									
1	0	24.36	34.224	22.97	419		0	100		0.65	5.27	5.15	0.36	8.07	
1	10	23.84	34.228	23.13	408		14	97		0.86	5.27	6.37	0.38	8.06	
1	19	23.33	34.174	23.23	395		31	93		0.88	6.15	7.28	0.41		
1	29	23.01	34.233	23.37	386		42	90		0.97	7.15	8.82	0.41	8.03	
1	39	22.69	34.243	23.47	380		50	88		0.98	7.66	9.90	0.40		
1	49		34.247		373					0.99	8.16	10.56	0.37		
1	73	19.56	34.431	24.46	319		134	70		1.45	15.31	16.99	0.16	7.93	
1	97	18.15	34.538	24.90	128		336	28		2.05	16.94	24.35	0.49		
1	122	13.79	34.966	26.15	18		487	3		2.40	23.97	32.59	0.10	7.66	
1	146	12.97	34.850	26.30	25	12.49	488	5		2.39	25.73	32.71	0.02		
2	201	11.46	34.823	26.57	8	4.63	522	2		2.51	29.24	32.65	0.04	7.63	
2	252	11.76	34.737*	26.45*	6	2.89	521	1		2.61	31.25	32.18	0.01		
2	298	11.23	34.762	26.57	4	2.29	529	1		2.72	34.64	30.60	0.03	7.60	
2	346	10.45	34.723	26.68	4	0.98	539	1		2.82	40.03	28.24	0.72		
2	397	8.99	34.670	26.88	4	1.36	556	1		3.00	48.44	27.74	1.14		
2	496	9.25	34.612	26.95	2	1.19	568	0		3.24	59.36	29.56	1.00	7.54	
2	596	6.89	34.573	27.12	4	1.36	586	1		3.42	72.79	35.50	0.52		
2	696	5.12	34.499*	27.16*	6	1.70	595	1		3.43	79.19	39.88	0.00		
2	796	5.47	34.562	27.29	6	2.46	604	1		3.46	87.60	44.21	0.00		
2	996	4.50	34.568	27.41	22	15.38	603	4		3.48	102.16	43.99	0.00	7.51	

T G THOMPSON CRUISE 026				STATION 022				OBSERVED VALUES				WAVE PERIOD X SECCHI SOUNDING 1188			
DATE	TIME	BARO	TEMP	REL	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND
24/01/68	5.7	1012.7	25.0	24.9	1012.7	25.0	24.9	1012.7	25.0	24.9	1012.7	25.0	24.9	1012.7	25.0
LAT	15-36.5N	TEMP DRY	TEMP WET	REL HUMID	WIND DIR	WIND DIR	WIND DIR	WIND DIR	WIND DIR	WIND DIR	WIND DIR	WIND DIR	WIND DIR	WIND DIR	WIND DIR
LONG	94-40.4W	TEMP WET	REL HUMID	WIND DIR	WIND DIR	WIND DIR	WIND DIR	WIND DIR	WIND DIR	WIND DIR	WIND DIR	WIND DIR	WIND DIR	WIND DIR	WIND DIR
CST	DEPTH	TEMP	SAL	SIGMAT	O2	O2	O2	O2	O2	O2	O2	O2	O2	O2	O2
1	0	25.53	34.124	22.54	429	429	429	429	429	429	429	429	429	429	429
1	10	25.43	34.125	22.57	427	427	427	427	427	427	427	427	427	427	427
1	19	23.81	34.141	23.07	385	385	385	385	385	385	385	385	385	385	385
1	29	23.52	34.230	23.22	376	376	376	376	376	376	376	376	376	376	376
1	39	22.17	34.291	23.65	344	344	344	344	344	344	344	344	344	344	344
1	48		34.331		324	324	324	324	324	324	324	324	324	324	324
1	72	17.58	34.650	25.13	112	112	112	112	112	112	112	112	112	112	112
1	96	13.98	34.842	26.09	21	21	21	21	21	21	21	21	21	21	21
1	120	13.21	34.790*	26.21*	17	17	17	17	17	17	17	17	17	17	17
1	144	12.70	34.838	26.35	12	12	12	12	12	12	12	12	12	12	12
2	201	12.19	34.814	26.43	15	15	15	15	15	15	15	15	15	15	15
2	252	11.84	34.805	26.49	16	16	16	16	16	16	16	16	16	16	16
2	302	11.34	34.741	26.53	9	9	9	9	9	9	9	9	9	9	9
2	350	10.73	34.690*	26.60*	12	12	12	12	12	12	12	12	12	12	12
2	401	9.85	34.704	26.77	8	8	8	8	8	8	8	8	8	8	8
2	499	7.95	34.598	26.99	6	6	6	6	6	6	6	6	6	6	6
2	600	6.98	34.571	27.11	4	4	4	4	4	4	4	4	4	4	4
2	700	6.04	34.569	27.23	4	4	4	4	4	4	4	4	4	4	4
2	800	5.39	34.561	27.30	7	7	7	7	7	7	7	7	7	7	7
2	897	5.14	34.559	27.33	9	9	9	9	9	9	9	9	9	9	9

T G THOMPSON		CRUISE 026		STATION 022		OBSERVED VALUES	
CAST	DEPTH	<sup>143</sup> UGAT/L	ALK MEG/L	CO2 MMOL/L			
1	0		2.34	2.16			
1	10		2.81	2.19			
1	19						
1	29		2.31	2.20			
1	39						
1	48		2.33	2.28			
1	72		2.34	2.37			
1	96						
1	120		2.36	2.43			
1	144						
2	201		2.37	2.46			
2	252						
2	302		2.36	2.48			
2	350						
2	401						
2	499		2.39	2.55			
2	600						
2	700						
2	800						
2	897						

T G THOMPSON CRUISE 026				STATION 023				OBSERVED VALUES				WAVE PERIOD 2 SECCHI SOUNGING 302			
DATE	TIME	BARO	TEMP	REL	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND
27/01/68	12.5	1012.5	24.4	23.3	1012.5	24.4	23.3	1012.5	24.4	23.3	1012.5	24.4	23.3	1012.5	24.4
15-47.0M	15-47.0M	15-47.0M	15-47.0M	15-47.0M	15-47.0M	15-47.0M	15-47.0M	15-47.0M	15-47.0M	15-47.0M	15-47.0M	15-47.0M	15-47.0M	15-47.0M	15-47.0M
LONG	095-26.0M	095-26.0M	095-26.0M	095-26.0M	095-26.0M	095-26.0M	095-26.0M	095-26.0M	095-26.0M	095-26.0M	095-26.0M	095-26.0M	095-26.0M	095-26.0M	095-26.0M
CAST	DEPTH	TEMP	SAL	SIGMAT	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND
1	0	25.05	34.122	22.68	407	407	407	407	407	407	407	407	407	407	407
1	10	24.32	34.130	22.91	390	390	390	390	390	390	390	390	390	390	390
1	19	22.87	34.255	23.43	348	348	348	348	348	348	348	348	348	348	348
1	29	22.52	34.262	23.53	347	347	347	347	347	347	347	347	347	347	347
1	38	21.29	34.367	23.95	272	272	272	272	272	272	272	272	272	272	272
1	47	20.00	34.694	24.55	194	194	194	194	194	194	194	194	194	194	194
1	70	15.55	34.871	25.77	23	23	23	23	23	23	23	23	23	23	23
1	93	14.20	34.874	26.07	13	13	13	13	13	13	13	13	13	13	13
1	115	13.66	34.881	26.18	15	15	15	15	15	15	15	15	15	15	15
1	136	13.63	34.866	26.18	12	12	12	12	12	12	12	12	12	12	12
1	269	11.77	34.794	26.49	22	22	22	22	22	22	22	22	22	22	22



T G THOMPSON CRUISE 026 STATION 023 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.32	2.14
1	10		2.29	2.21
1	19			
1	29		2.30	2.26
1	38			
1	47		2.31	2.33
1	70		2.32	2.46
1	93			
1	115		2.32	2.47
1	136			
1	269		2.34	2.48



T G THOMPSON CRUISE 026				STATION 025				OBSERVED VALUES				WAVE PERIOD 03			
DATE	28/01/68	BARO	1009.5	WEATHER	01	WIND VELOC	02	WIND DIR	14	WAVE DIR	30	SECCHI	05	WAVE DIR	30
HOUR	22.06	TEMP	28.3	VISIBILITY	08	WAVE DIR	14	WAVE DIR	30	WAVE DIR	30	SOUNDING	6509	WAVE DIR	30
LAT	13-58.0 N	TEMP	28.1	CLOUD TYPE	0	WAVE DIR	30	WAVE DIR	30	WAVE DIR	30	WAVE DIR	30	WAVE DIR	30
LONG	93-30.0 W	REL HUMID	98	CLOUD AMT	0	WAVE DIR	30	WAVE DIR	30	WAVE DIR	30	WAVE DIR	30	WAVE DIR	30
CAST	DEPTH	TEMP	SAL	SIGMAT	02	UGAT/L	02	UGAT/L	02	UGAT/L	02	UGAT/L	02	UGAT/L	02
		DEG.C	0/00												
1	0	26.37	34.047	22.22	478	-71	118	0.36	3.26	0.55	0.17	8.38	0.17	8.38	0.17
1	10	25.97	34.048	22.35	479	-69	117	0.41	3.76	0.77	0.16	8.37	0.16	8.37	0.16
1	20	15.90	34.691	25.55	61	423	13	2.13	20.33	26.08	0.99	7.89	0.99	7.89	0.99
1	30	14.15	34.840	26.05	23	478	5	2.29	22.97	30.36	0.06	7.89	0.06	7.89	0.06
1	39	13.87	34.842	26.11	13	491	3	2.25	23.84	30.75	0.05	7.89	0.05	7.89	0.05
1	49	13.64	34.840	26.16	11	495	2	2.35	23.59	31.11	0.03	7.87	0.03	7.87	0.03
1	74	13.12	34.879	26.29	16	496	3	2.31	24.72	31.44	0.03	7.84	0.03	7.84	0.03
1	98	12.82	34.853	26.33	22	493	4	2.39	26.35	31.74	0.03	7.88	0.03	7.88	0.03
1	123	12.54	34.853	26.39	30	497	6	2.36	25.60	31.78	0.03	7.88	0.03	7.88	0.03
1	149	12.32	34.843	26.42	31	489	6	2.32	27.11	32.29	0.02	7.83	0.02	7.83	0.02
2	201	11.80	34.803	26.49	14	512	3	2.45	29.74	32.98	0.01	7.83	0.01	7.83	0.01
2	251	11.29	34.777	26.57	10	522	2	2.52	31.88	32.93	0.01	7.80	0.01	7.80	0.01
2	302	10.72	34.750	26.65	4	535	1	2.68	36.02	31.05	0.00	7.80	0.00	7.80	0.00
2	352	10.25	34.719	26.71	5	540	1	2.74	39.28	31.77	0.00	7.80	0.00	7.80	0.00
2	422	9.53	34.682	26.80	2	552	0	2.90	44.68	29.94	0.32	7.74	0.32	7.74	0.32
2	503	8.10	34.605	26.97	4	569	1	3.10	56.60	32.75	0.32	7.74	0.32	7.74	0.32
2	503	7.26	34.579	27.07	3	581	0	3.22	67.02	34.63	0.33	7.74	0.33	7.74	0.33
2	734	6.37	34.576	27.19	5	592	1	3.26	74.30	40.07	0.02	7.74	0.02	7.74	0.02
2	804	5.76	34.554	27.25	5	601	1	3.37	82.63	41.56	0.00	7.74	0.00	7.74	0.00
2	1012	4.72	34.566	27.39	14	607	2	3.44	98.27	44.69	0.02	7.74	0.02	7.74	0.02
3	1592	2.79	34.627	27.63	125	528	19	3.00	134.41	41.15	0.07	7.82	0.07	7.82	0.07
3	2490	1.89	34.568	27.74	215	454	32	2.76	149.22	36.86	0.03	7.92	0.03	7.92	0.03
3	3190	1.98	34.671	27.73	228	439	34	2.72	149.22	37.56	0.09	7.89	0.09	7.89	0.09
3	3689	1.91	34.673	27.74	231	436	35	2.75	150.98	37.06	0.04	7.89	0.04	7.89	0.04
3	4090	2.04	34.675	27.73	232	432	35	2.72	151.23	36.55	0.05	7.89	0.05	7.89	0.05
3	4489		34.616		234			2.80	151.23	37.16	0.03	7.87	0.03	7.87	0.03
3	4890	2.03	34.680	27.73	234	432	35	2.74	150.22	37.17	0.06	7.87	0.06	7.87	0.06
3	5294	2.11	34.672	27.72	233	422	35	2.75	150.10	36.78	0.03	7.87	0.03	7.87	0.03
3	5697	2.16	34.671	27.72	233	431	35	2.73	150.10	36.74	0.07	7.87	0.07	7.87	0.07
3	6100	2.23	34.681	27.72	232	430	35	2.80	149.72	36.97	0.05	7.87	0.05	7.87	0.05

T G THOMPSON CRUISE 026 STATION 025 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0	4.00	2.29	2.03
1	10	0.96	2.29	2.07
1	20	0.09		
1	30	0.82	2.33	2.33
1	39	0.32		
1	49	0.09	2.32	2.48
1	74	0.76	2.34	2.54
1	98	0.15		
1	123	0.24	2.33	2.53
1	148	0.51		
2	201	0.19	2.32	2.54
2	251	0.48		
2	302	0.25	2.34	2.59
2	352	0.22		
2	402	0.00		
2	503	0.10	2.41	2.61
2	603	0.05		
2	704	0.38		
2	804	0.10		
2	1012	0.28	2.40	2.64
3	1692		2.44	2.70
3	2490		2.47	2.68
3	3190			
3	3689		2.48	2.68
3	4090			
3	4489			
3	4890		2.47	2.66
3	5294			
3	5697			
3	6100		2.47	2.60

T G THOMPSON CRUISE 026				STATION 026				OBSERVED VALUES				WAVE PERIOD 2 SECCHI 15 SOUNDING 38			
DATE	29/01/69	BARO	1009.0	WEATHER	41	WIND	12	WIND	12	WIND	12	WIND	12	WIND	12
HOUR	23.2	TEMP DRY	31.1	VISIBILITY	8	WIND	12	WIND	12	WIND	12	WIND	12	WIND	12
LAT	13-43.0N	TEMP WET	29.4	CLOUD TYPE	0	WIND	12	WIND	12	WIND	12	WIND	12	WIND	12
LONG	091-08.0W	REL HUMID	89	CLOUD AMT	1	WAVE	12	WAVE	12	WAVE	12	WAVE	12	WAVE	12
CAST	DEPTH	TEMP	SAL	SIGMAT	Q2	Q2	Q2	Q2	Q2	Q2	Q2	Q2	Q2	Q2	Q2
		DEG.C	O/00		UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L
1	0	27.05	33.567	21.65	439	-36	109	0.26	3.39	1.93	0.09	8.41			
1	10	26.65	33.557	21.76	443	-37	109	0.29	3.01	1.26	0.09				
1	20	25.95	33.597	22.01	459	-48	112	0.37	2.38	2.76	0.14	8.40			
1	30	25.33	33.919	22.45	392	21	95	0.66	0.25	4.25	1.06				

DATE HOUR LONG	30/01/68 3.1 13-22.0W 51-24.0N	T G THOMPSON CRUISE 026				STATION 027				OBSERVED VALUES						
		BARO TEMP DRY TEMP WET REL HUMID	1011.3 28.5 27.2 90	SIGMAT	O2 UGAT/L	WEATHER VISIBILITY CLOUD TYPE CLOUD AMT	O2 UGAT/L	AOU UGAT/L	WIND VELOC WIND DIREC WAVE HEIGHT	06 35 35 1	PO4 UGAT/L	SI04 UGAT/L	NO3 UGAT/L	NO2 UGAT/L	PH	
CAST	DEPTH	TEMP DEG.C	SAL O/100													
1	0	26.76	33.556	21.73	448	-42	111	0.23	0.88	0.10	0.03	8.44				
1	10	26.63	33.555	21.77	450	-43	111	0.21	0.75	0.14	0.02	8.27				
1	20	26.40	33.555	21.84	456	-48	112	0.18	0.63	0.09	0.01	8.35				
1	30	25.22	33.669	22.29	420	-5	101	0.46	1.13	3.33	0.41					
1	40	23.22	34.046	23.17	347	80	81	1.00	5.27	10.61	0.70					
1	50	20.62	34.436	24.19	202	243	45	1.65	11.80	19.86	1.59	7.98				
1	76	14.75	34.837	25.92	9	486	2	2.38	21.84	30.36	0.11	7.85				
1	101	13.76	34.866	26.15	9	496	2	2.39	22.84	30.94	0.03					
1	126	13.41	34.874	26.23	15	494	3	2.38	24.10	30.95	0.02	7.93				
1	151	13.11	34.863	26.28	13	499	3	2.38	24.97	31.84	0.01					
2	201	12.59	34.850	26.38	9	509	2	2.42	28.24	32.03	0.03	7.88				
2	252	11.81	34.813	26.50	7	519	1	2.48	30.62	32.60	0.01					
2	302	11.12	34.758	26.58	7	527	1	2.62	33.63	31.43	0.00	7.87				
2	352	10.50	34.733	26.68	6	536	1	2.69	38.53	29.82	0.06					
2	403	9.62	34.677	26.78	7	546	1	2.90	45.18	27.35	1.11					
2	503	7.76	34.567	26.99	5	572	1	3.24	61.62	31.01	1.15	7.79				
2	604	6.94	34.757*	27.26*	4	584	1	3.28	69.40	36.10	0.08					
2	705	6.35	34.573	27.19	4	593	1	3.34	75.93	38.96	0.16					
2	811	5.71	34.559	27.26	7	599	1	3.36	83.33	41.29	0.02					
2	1012	4.57	34.567	27.40	24	600	4	3.47	101.78	44.16	0.00	7.77				

[illegible]

T G THOMPSON		CRUISE 026		STATION 028		OBSERVED VALUES	
CAST	DEPTH	NH3 USAT/L	ALK MEG/L	CO2 MMOL/L			
2	0	1.08	2.38	2.21			
2	10	1.27	2.38	2.17			
2	20	1.67					
2	30	1.57	2.40	2.17			
2	40	2.14					
2	50	1.20	2.42	2.48			
2	76	1.42	2.41	2.52			
2	101	1.24					
2	126	0.91	2.43	2.54			
2	151	0.64					
3	199	0.48	2.42	2.55			
3	249	0.39					
3	299	0.13	2.43	2.59			
3	349	0.00					
3	399	0.27					
3	499	0.16	2.46	2.62			
3	598	0.14					
3	698	0.31					
3	798	0.34					
3	997	0.49	2.47	2.65			
1	3010		2.53	2.65			
1	3514		2.54	2.73			
1	4422						
1	5127						
1	5534		2.54	2.68			
1	5546						



T G THOMPSON CRUISE 026				STATION 029				OBSERVED VALUES									
DATE 31/01/69		BAPO 1011.7		WEATHER		WIND VELOC 02		WAVE PERIOD X		SECCHI SOUNGING 3176		NO2 UGAT/L		NO3 UGAT/L		PH	
HOUR 2.4		TEMP DRY 28.3		VISIBILITY 8		WIND DIREC 18											
LAT 12-49.0N		TEMP WET 26.4		CLOUD TYPE X		WAVE DIREC 99											
LONG 092-35.0W		REL HUMID 86		CLOUD AMT 9		WAVE HEIGHT X											
CAST	DEPTH	TEMP DEG.C	SAL P/‰	SIGMAT	Q2 UGAT/L	Q2 UGAT/L	AOU UGAT/L	G/O Q2 SATN	P04 UGAT/L	S104 UGAT/L	NO3 UGAT/L	NO2 UGAT/L					
1	0	27.22	34.009	21.92	458		-57	114	0.24	1.63	0.00	0.27	8.36				
1	9	27.18	34.006	21.93	453		-56	114	0.18	1.25	0.11	0.23	8.38				
1	19	26.55	34.232	22.30	501		-96	124	0.30	1.13	1.09	0.26					
1	28	25.74	34.412	22.69	440		-30	108	0.66	1.13	0.00	0.20	8.29				
1	37	24.85	34.418	22.97	417		-1	101	0.92	1.13	9.02	0.23					
1	46		34.450		363				1.12	2.13	11.04	0.44					
1	71	16.74	34.684	25.35	73		404	15	2.03	19.08	24.66	0.52	8.00				
1	96	13.99	34.885	26.12	8	3.40	494	2	2.39	24.22	30.51	0.08					
1	120	13.58	34.865	26.19	12	5.35	495	2	2.31	24.60	31.23	0.03	7.93				
1	144	13.15	34.870	26.28	15	9.18	497	3	2.29	25.48	32.08	0.02					
2	186	12.68	34.860	26.37	7	3.06	509	1	2.42	27.74	32.88	0.02	7.87				
2	231	12.24	34.851	26.45	13	6.03	514	2	2.48	28.49	32.88	0.02					
2	275	11.63	34.777	26.50	11	6.54	517	2	2.48	31.00	31.34	0.01	7.88				
2	318	11.09	34.766	26.50	7	1.23	528	1	2.56	33.63	32.51	0.01					
2	364	10.64	34.741	26.66	7	2.51*	533	1	2.64	36.14	31.75	0.02					
2	452	9.25	34.667	26.84	6	0.25	551	1	2.95	49.07	25.87	1.84	7.79				
2	542	7.94	34.610	27.00	4	0.47	570	1	3.12	60.37	29.31	1.21					
2	631	7.00	34.598	27.12	4	0.30	583	1	3.22	70.15	36.35	0.34					
2	722	6.33	34.559	27.18	7	1.87	591	1	3.25	75.43	41.56	0.00					
2	915	5.14	34.561	27.33	10	4.67	605	2	3.38	91.74	43.86	0.01	7.73				

T G THOMPSON CRUISE 026 STATION 029 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.35	2.12
1	9			
1	19			
1	28		2.37	2.19
1	37			
1	46		2.37	2.24
1	71			
1	96			
1	120			
1	144			
2	186		2.42	2.44
2	231			
2	275			
2	318			
2	364			
2	452		2.43	2.54
2	542			
2	631			
2	722			
2	915		2.45	2.59

T S THOMPSON CRUISE 026				STATION 030				OBSERVED VALUES					
DATE 31/01/68		BARO 1013.4		WEATHER X1		WIND VELOC 12		WAVE PERIOD 13		SECCHI 3658			
HOUR 15.7		TEMP DRY 28.3		VISIBILITY 8		WIND DIREC 06		SOUNDING					
LAT 10-53.0N		TEMP WET 25.7		CLOUD TYPE 8		WAVE DIREC 02							
LONG 093-24.0W		REL HUMID 81		CLOUD AMT 3		WAVE HEIGHT 2							
CAST	DEPTH	TEMP DEG.C	SAL C/00	SIGMAT	O2 UGAT/L	O2 UGAT/L	AQU UGAT/L	O/C O2 SATN	P04 UGAT/L	SI04 UGAT/L	NO3 UGAT/L	NO2 UGAT/L	P
1	0	27.62	33.522	21.43	419		-19	105	0.22	0.63	0.33	0.05	8.67
1	10	27.56	33.529	21.45	418		-18	105	0.16	0.50	0.13	0.02	8.68
1	20	27.55	33.518	21.45	423		-22	106	0.19	0.88	0.10	0.03	
1	30	27.56	33.543	21.46	419		-18	105	0.17	0.25	0.14	0.02	8.68
1	39	27.54	33.523	21.46	418		-18	105	0.22			0.05	
1	49		33.511		375				0.35	1.38	0.88	0.72	
1	75	20.25	34.507	24.34	97		350	22	1.74	12.42	21.94	0.08	8.17
1	99	14.17	34.780	26.00	48	30.13	453	9	2.27	22.84	28.14	0.25	
1	124	13.23	34.785	26.20	45	28.98	465	9	2.24	24.35	29.28	0.05	7.87
1	149	13.02	34.938	26.28	21	8.92	492	4	2.34	24.97	27.49	0.03	
2	196	12.66	34.879	26.39	23	15.47	493	5	2.37	26.98	31.75	0.06	7.87
2	246	11.98	34.863	26.51	45	32.26	479	9	2.41	27.99	31.38	0.01	
2	293	11.44	34.792	26.55	14	8.20	517	3	2.49	31.25	32.71	0.02	7.81
2	340	10.99	34.758	26.61	29	14.83	506	5	2.71	32.50	32.73	0.00	
2	387	10.34	34.738	26.71	8	3.57	535	1	3.01	38.03	32.19	0.00	
2	483	9.16	34.666	26.95	4	0.85	554	1	3.26	48.82	30.58	0.01	7.68
2	581	7.70	34.618	27.04	3	0.38	575	1	3.88	60.62	33.65	0.52	
2	678	6.71	34.585	27.15	4	1.06	588	1	3.69	70.91	34.16	0.00	
2	776	6.00	34.580	27.24	9	3.14	593	1	3.45	77.94	36.30	0.01	
2	972	4.91	34.569	27.37	27	19.08	592	4	3.40	92.37	43.74	0.00	7.59

T G THOMPSON CRUISE 026 STATION 030 OBSERVED VALUES

CST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.38	2.10
1	10		2.37	2.13
1	20			
1	30		2.40	2.10
1	39			
1	49		2.37	2.16
1	75		2.41	2.43
1	99			
1	124		2.43	2.47
1	149			
2	196		2.44	2.53
2	246			
2	293		2.45	2.58
2	340			
2	387			
2	483		2.45	2.65
2	581			
2	678			
2	776			
2	972		2.50	2.66

T G THOMPSON				CRUISE 026		STATION 031		OBSERVED VALUES							
DATE		01/02/68		BARO DRY		1010.3		WEATHER		X1		WIND VELOC		14	
HOUR		0.6		TEMP WET		27.8		VISIBILITY		8		WIND DIREC		09	
LAT		10-13.0N		TEMP REL		26.7		CLOUD TYPE		8		WAVE DIREC		26	
LONG		094-35.0W		REL HUMID		92		CLOUD AMT		2		WAVE HEIGHT		5	
CAST	DEPTH	TEMP DEG.C	SAL O/00	SIGMAT	O2 UGAT/L	O2 UGAT/L	AOU UGAT/L	O/O O2 SATN	P04 UGAT/L	S104 UGAT/L	NO3 UGAT/L	NO2 UGAT/L	PH		
1	0	25.74	34.268	22.59	438		-27	107	0.69	0.75	6.21	0.43	8.56		
1	10	25.90	34.311	22.57	438		-28	107	0.73	0.38	6.61	0.41	8.57		
1	19	25.93	34.391	22.62	432		-24	106	0.83	0.13	7.53	0.33			
1	29	25.78	34.456	22.71	427		-17	104	0.88	0.88	8.50	0.29	8.54		
1	39	25.37	34.345	22.75	419		-6	102	0.90	1.38	8.67	0.50			
1	49	19.93	34.524	24.44	93		357	21	1.97	12.80	19.41	0.68	8.12		
1	73	14.33	34.857	26.03	86		413	17	1.99	20.96	24.38	0.54	7.97		
1	97	13.46	34.873	26.22	112		396	22	1.98	21.46	26.47	0.21			
1	122	13.21	34.905	26.30	86		424	17	2.09	21.71	29.26	0.07	8.00		
1	146	13.03	34.898	26.33	63	41.31	450	12	2.15	21.84	31.19	0.03			
2	195	12.35	34.870	26.44	56	38.33	464	11	2.23	24.60	32.01	0.14	7.87		
2	244	12.06	34.832	26.47	61	43.22	462	12	2.32	26.73	32.25	0.02			
2	292	11.41	34.776	26.54	63	42.37	468	12	2.39	29.87	32.28	0.03	7.79		
2	340	10.78	34.698	26.60	46	31.54	492	9	2.51	32.25	32.39	0.01			
2	388	10.34	34.728	26.70	26	15.81*	518	5	2.70	35.89	32.38	0.02			
2	482	8.86	34.655	26.89	3	0.81	559	1	3.06	49.20	32.27	0.00	7.71		
2	578	7.51	34.605	27.06	4	0.21	576	1	3.32	62.00	31.95	0.54			
2	675	6.62	34.575	27.16	7	1.49	587	1	3.36	69.90	34.94	0.02			
2	774	5.90	34.562	27.24	16	3.02	588	3	3.39	77.94	38.91	0.00			
2	973	4.76	34.564	27.38	22	15.17	599	4	3.48	95.13	44.53	0.01	7.61		

T G THOMPSON CRUISE 026				STATION 032				OBSERVED VALUES				WAVE PERIOD 2 SECCHI 23 SOUNDING 3640				
DATE	01/02/68	BARO	1013.6	WEATHER	X1	WIND VELOC	13	WIND DIREC	09	WAVE HEIGHT	03	PO4	SI04	NO3	NO2	PH
TIME	17.9	TEMP	29.0	VISIBILITY	8	WAVE HEIGHT	03	WAVE DIREC	09	WAVE HEIGHT	03	UGAT/L	UGAT/L	UGAT/L	UGAT/L	
LAT	09-32.0N	TEMP	24.7	CLOUD TYPE	8	WAVE HEIGHT	03	WAVE DIREC	09	WAVE HEIGHT	03	UGAT/L	UGAT/L	UGAT/L	UGAT/L	
LONG	093-22.0W	REL HUMID	24.7	CLOUD AMT	2	WAVE HEIGHT	03	WAVE DIREC	09	WAVE HEIGHT	03	UGAT/L	UGAT/L	UGAT/L	UGAT/L	
CST	DEPTH	TEMP	SAL	SIGMAT	O2	O2	UGAT/L	UGAT/L	O/O	O2	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	
1	0	27.20	33.855	21.81	429	429	429	429	107	107	107	0.29	1.51	0.28	0.11	8.69
1	10	27.06	33.855	21.86	427	427	427	427	106	106	106	0.31	0.88	0.26	0.09	8.69
1	20	27.03	33.869	21.88	429	429	429	429	107	107	107	0.32	1.38	0.25	0.12	
1	30	26.56	33.907	22.06	429	429	429	429	106	106	106	0.56	1.63	0.00	0.33	8.65
1	40	26.17	33.924	22.19	419	419	419	419	103	103	103	0.59	1.38	3.29	0.37	
1	50		34.021		342	342	342	342				0.94	4.14	7.05	3.66	
1	74	15.31	34.760	25.74	32	32	32	32	7	7	7	2.31	21.08	27.29	1.89	7.93
1	99	13.30	34.768	26.17	73	73	73	73	14	14	14	2.18	24.10	29.06	0.10	
1	124	12.86	34.791	26.28	64	64	64	64	12	12	12	2.23	24.72	29.92	0.04	7.93
1	149	12.84	34.873	26.34	20	20	20	20	4	4	4	2.35	24.97	31.56	0.08	
2	201	12.37	34.833	26.41	47	47	47	47	9	9	9	2.30	26.48	31.29	0.10	7.87
2	251	11.74	34.800	26.50	50	50	50	50	9	9	9	2.36	29.37	32.00	0.06	
2	298	11.20	34.758	26.57	52	52	52	52	10	10	10	2.37	31.00	32.09	0.06	7.86
2	347	10.76	34.751	26.64	36	36	36	36	7	7	7	2.52	33.38	32.95	0.04	
2	396	10.13	34.713	26.73	6	6	6	6	1	1	1	2.81	40.79	32.24	0.03	
2	495	8.57	34.658	26.94	2	2	2	2	0	0	0	3.09	54.72	28.79	1.01	7.64
2	595	7.17	34.597	27.10	6	6	6	6	1	1	1	3.26	66.51	36.85	0.04	
2	699	6.41	34.587	27.19	8	8	8	8	1	1	1	3.32	73.54	41.09	0.01	
2	800	5.75	34.588	27.28	18	18	18	18	3	3	3	3.33	80.57	42.35	0.01	
2	1001	4.64	34.564	27.39	38	38	38	38	6	6	6	3.38	97.89	41.31	0.00	7.60

T G THOMPSON CRUISE 026				STATION 032		OBSERVED VALUES	
CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L			
1	0	1.26		2.15			
1	10	1.17		2.15			
1	20	1.19					
1	30	3.07		2.20			
1	40	1.32					
1	50	1.06		2.29			
1	74	0.96		2.55			
1	99	1.00					
1	124	0.93		2.56			
1	149	0.76					
2	201	0.35		2.59			
2	251	1.21					
2	298	0.67		2.58			
2	347	0.26					
2	396	0.32					
2	495	0.01		2.68			
2	595	0.22					
2	699	0.38					
2	800	0.24					
2	1001	0.42		2.70			

T G THOMPSON CRUISE 026				STATION 033				OBSERVED VALUES						
DATE		02/02/68	BARO	1012.3	WEATHER		WIND VELOC	12	WAVE PERIOD		2			
TIME		2.3	TEMP DRY	26.2	VISIBILITY		WIND DIREC	09	SECCHI					
LAT		09-34.0N	TEMP WET	22.8	CLOUD TYPE		WAVE DIREC	08	SOUNDING		3576			
LONG		092-37.0W	REL HUMID	75	CLOUD AMT		WAVE HEIGHT	2						
CST	DEPTH	TEMP	SAL	SIGMAT	O2	O2	AOU	O/O	O2	PO4	NO3	NO2	PH	
		DEG.C	O/100		UGAT/L	UGAT/L	UGAT/L	SATN		UGAT/L	UGAT/L	UGAT/L		
1	0	27.03	33.959	21.95	430		-27	107		0.32	1.76	0.54	8.73	
1	10	26.95	33.982	21.99	435		-31	108		0.43	1.76	0.11		
1	20	26.89	34.014	22.03	437		-33	109		0.35	2.13	0.09		
1	30	26.77	34.011	22.07	436		-32	108		0.35	1.76	0.11	8.42	
1	40	25.61	34.217	22.58	415		-4	101		0.75	2.13	0.49		
1	49		34.321		187					1.57	8.53	0.68		
1	74	14.64	34.813	25.93	12		485	2		2.34	22.97	29.81	0.07	7.96
1	99	13.22	34.798	26.21	41		470	8		2.30	24.72	30.31	0.03	
1	124	12.98	34.859	26.31	28		485	5		2.30	25.48	31.58	0.02	7.94
1	148	12.59	34.837	26.37	39		478	8		2.37	26.61	31.12	0.02	
2	200	11.93	34.793	26.46	58		467	11		2.36	28.74	30.67	0.05	7.96
2	250	11.45	34.775	26.54	58		473	11		2.38	29.74	31.40	0.03	
2	300	10.94	34.747	26.61	31		506	6		2.52	33.51	33.11	0.00	7.87
2	347	10.40	34.727	26.69	7		536	1		2.79	38.28	32.19	0.00	
2	397	9.75	34.678	26.76	4		547	1		2.93	43.80	28.47	0.78	
2	495	7.93	34.629	27.01	5		570	1		3.23	60.99	30.73	1.09	7.71
2	595	6.95	34.578	27.11	4		584	1		3.30	64.38	38.51	0.02	
2	695	6.24	34.585	27.21	15		583	3		3.20	69.40	38.77	0.06	
2	801	5.58	34.564	27.28	25		584	4		3.35	82.96	43.70	0.00	
2	1002	4.52	34.571	27.41	39		586	6		3.44	101.53	44.21	0.00	7.65



T G THOMPSON			CRUISE 026			STATION 034			OBSERVED VALUES			WAVE PERIOD 3		
DATE	02/02/68		BARO	1014.5		WEATHER	X1		WIND VELOC	14		SECCHI	12	
TIME	09-56.00		TEMP DRY	26.9		VISIBILITY	8		WIND DIREC	07		SOUNDING	3576	
LONG	091-15.0W		TEMP WET	23.6		CLOUD TYPE	6		WAVE DIREC	07				
			REL HUMID	76		CLOUD AMT	6		WAVE HEIGHT	2				
CST	DEPTH	TEMP DEG.C	SAL O/00	SIGMAT	O2 UGAT/L	O2 UGAT/L	O2 UGAT/L	AQU UGAT/L	O/Q O2 SATN	P04 UGAT/L	S104 UGAT/L	NO3 UGAT/L	NO2 UGAT/L	PH
1	0	25.15	34.446	22.90	446			-32	108	0.78	0.63	9.25	0.38	8.26
1	10	24.93	34.456	22.97	446			-31	108	0.83	0.38	7.17	0.36	8.26
1	20	24.83	34.542	23.07	444			-29	107	0.96	0.50	10.68	0.37	
1	30	22.39	34.624	23.84	373			58	86	1.47	8.03	17.68	0.31	8.09
1	40	19.61	34.693	24.65	206			246	46	1.84	14.18	20.86	0.79	
1	50	15.93	34.827	25.65	13			471	3	2.33	20.71	28.63	0.58	7.87
1	75	13.67	34.857	26.16	9			496	2	2.35	24.10	30.74	0.10	7.86
1	100	13.22	34.866	26.26	19	11.35		492	4	2.35	25.23	31.35	0.04	
1	125	13.01	34.876	26.31	14	8.97		499	3	2.35	25.60	32.47	0.05	7.87
1	150	12.80	34.866	26.35	12	7.56		503	2	2.38	26.61	32.20	0.07	
2	201	12.00	34.831	26.48	12	6.63		512	2	2.48	29.87	33.00	0.07	7.84
2	252	11.46	34.780	26.54	5	1.44		525	1	2.54	32.50	32.99	0.04	
2	302	10.75	34.750	26.64	3	1.23		536	1	2.72	36.27	31.79	0.02	7.77
2	352	10.15	34.714	26.72	3	0.42		543	1	2.83	42.17	29.42	0.46	
2	403	9.22	34.661	26.84	1	0.30		556	0	2.98	49.32	29.42	1.01	
2	503	7.67	34.605	27.03	2	0.72		576	0	3.26	63.88	32.84	0.61	7.72
2	604	6.64	34.586	27.16	7	3.70		586	1	3.28	70.03	40.54	0.05	
2	705	5.95	34.569	27.24	13	5.95		590	2	3.33	78.81	42.78	0.00	
2	806	5.35	34.573	27.32	20	10.62		592	3	3.36	87.72	42.70	0.03	
2	1007	4.58	34.569	27.40	50	34.34		574	8	3.40	99.65	43.82	0.01	7.75

T G THOMPSON CRUISE 026 STATION 034 OBSERVED VALUES

CST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0	2.41	2.40	2.21
1	10		2.38	2.24
1	20			
1	30		2.38	2.31
1	40	1.65		
1	50	0.32	2.39	2.43
1	75	0.69	2.39	2.46
1	100	0.51		
1	125	0.40	2.40	2.52
1	150	0.48		
2	201	0.45	2.40	2.50
2	252	0.35		
2	302	0.30	2.40	2.46
2	352	0.38		
2	403	0.50		
2	503	0.13	2.41	2.54
2	604	0.19		
2	705	0.69		
2	806	0.22		
2	1007	0.33	2.44	2.57



T G THOMPSON		CRUISE 026		STATION 035		OBSERVED VALUES	
CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L			
1	0		2.40	2.20			
1	10		2.38	2.25			
1	20						
1	30		2.40	2.44			
1	40						
1	50		2.39	2.50			
1	75		2.39	2.49			
1	100						
1	126		2.38	2.51			
1	151						
2	201		2.39	2.53			
2	252						
2	302		2.39	2.51			
2	352						
2	403						
2	503		2.40	2.57			
2	604						
2	705						
2	806						
2	1007		2.43	2.62			

T G THOMPSON CRUISE 326 STATION 336 OBSERVED VALUES

DATE 03/02/68  
 HOUR 06:5  
 LAT 10-06.0N  
 LONG 089-26.0W

BARO 1013.0  
 TEMP DRY 26.0  
 TEMP WET 23.3  
 REL HUMID 80

WEATHER X1  
 VISIBILITY 8  
 CLOUD TYPE 2  
 CLOUD AMT 2

WIND VELOC 03  
 WIND DIREC 08  
 WAVE HEIGHT 2

WAVE PERIOD 3  
 SECCHI 20  
 SOUNDING 3365

CST	DEPTH	TEMP DEG.C	SAL O/100	SIGMAT	O2 UGAT/L	O2 UGAT/L	ACU UGAT/L	O/O O2 SATN	P04 UGAT/L	S104 UGAT/L	NO3 UGAT/L	NO2 UGAT/L	PH
1	0	21.81	34.575	23.97	417		19	96	1.32	12.80	15.72	0.21	8.12
1	10	21.44	34.585	24.08	415		23	95	1.33	12.30	15.55	0.17	8.12
1	20	21.16	34.599	24.17	412		29	93	1.31	12.30	16.43	0.17	
1	30	20.64	34.617	24.32	382		63	86	1.33	13.05	16.32	0.15	8.15
1	40	15.37	34.904	25.83	93		395	19	1.96	20.46	25.35	0.03	
1	50	14.56	34.917	26.02	50		447	10	2.10	20.96	27.76	0.48	7.92
1	75	14.05	34.916	26.13	39		462	8	2.21	21.84	29.75	0.09	7.88
1	100	13.68	34.899	26.20	39	25.84	466	8	2.26	21.84	29.89	0.03	
1	125	13.47	34.917	26.25	37		471	7	2.25	22.59	29.23	0.02	7.87
1	150	13.28	34.911	26.29	50	26.52	459	10	2.25	23.84	26.45	0.02	
2	198	12.75	34.865	26.36	43	23.29	473	8	2.29	24.72	31.20	0.02	7.85
2	248	12.11	34.271*	26.02*	9		515	2	2.45	29.24	31.51	0.01	
2	297	11.37	34.781	26.56	9	3.82	522	2	2.57	31.50	29.12	0.00	7.79
2	346	10.70	34.745	26.65	7	3.95	532	1	2.65	34.89	32.86	0.00	
2	396	10.07	34.701	26.73	10	5.61	537	2	2.81	39.66	32.85	0.01	
2	495	8.66	34.639	26.91	3	0.17	562	1	3.08	52.46	30.45	0.27	7.71
2	595	7.48	34.599	27.06	3	0.77	578	1	3.29	62.12	34.19	0.01	
2	694	6.52	34.590	27.18	19	6.97	576	3	3.27	68.52	35.80	0.00	
2	794	5.98	34.580	27.25	17	14.02	595	3	3.30	75.80	41.60*	0.00	
2	997	4.94	34.572	27.36	34	22.99	585	5	3.43	91.36	36.56	0.00	7.72

T. C. THOMPSON CRUISE 026 STATION 036 OBSERVED VALUES

CAST	DEPTH	SiO <sub>2</sub> UGAT/L	ALK MEG/L	CO <sub>2</sub> MMOL/L
1	0		2.43	2.33
1	10		2.40	2.31
1	20			
1	30		2.40	2.31
1	40			
1	50		2.41	2.45
1	75		2.40	2.44
1	100			
1	125		2.41	2.46
1	150			
2	198		2.41	2.46
2	249			
2	297		2.42	2.51
2	346			
2	395			
2	495		2.43	2.56
2	595			
2	694			
2	794			
2	997		2.47	2.63



T. S. THOMPSON CRUISE 026 STATION 037 OBSERVED VALUES

CAST	DEPTH	AM3 MICAT/L	ALV MEG/L	CO2 MMOL/L
1	0		2.31	2.25
1	10		2.31	2.20
1	20			
1	30		2.31	2.31
1	40			
1	49		2.33	2.47
1	74		2.32	2.49
1	90			
1	124		2.32	2.48
1	148			
2	198		2.33	2.49
2	248			
2	298		2.31	2.45
2	347			
2	397			
2	496		2.35	2.53
2	596			
2	696			
2	796			
2	995		2.39	2.63



T G THOMPSON CRUISE 026				STATION 038				OBSERVED VALUES				WAVE PERIOD 3 SECCHI 07 SOUNDING 3191			
DATE HOUR LAT LONG	04/02/68 16:2 10-04.0N 088-15.0W	BAKO TEMP TEMP REL HUMID	1012.3 26.9 22.7 22.70	SIGMAT	02 UGAT/L	02 UGAT/L	02 UGAT/L	WIND VELOC WIND DIREC WAVE DIREC WAVE HEIGHT	0/0 02 SATN	AOU UGAT/L	P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L	PH
CAST	DEPTH	TEMP DEG.C	SAL 0/00												
1	0	24.90	33.588	22.33	464			-46	111	-46	0.23	0.38	0.26	0.08	8.34
1	10	24.89	33.609	22.35	460			-42	110	-42	0.23	0.38	0.22	0.07	8.36
1	20	24.85	33.623	22.37	444			-27	107	-27	0.34	0.50	8.04	0.11	
1	30	21.01	33.931	23.70	332			112	75	112	0.90	4.89	9.66	0.43	8.25
1	40	19.59	34.540	24.54	160			293	35	293	1.67	12.55	17.14	0.51	
1	50	16.24	34.872	25.61	127	105.06		353	26	353	1.87	17.57	22.54	0.19	8.01
1	75	14.40	34.870	26.02	12	7.35		487	2	487	2.31	22.59	30.16	0.10	7.84
1	100	13.68	34.885	26.18	15	11.90		490	3	490	2.37	23.22	30.24	0.06	
1	125	13.33	34.837	26.26	11			498	2	498	2.42	24.60	31.74	0.03	7.85
1	150	13.09	34.883	26.30	12	7.10		500	2	500	2.39	25.23	32.34	0.02	
2	198	12.64	34.878	26.39	14	11.52		503	3	503	2.41	26.10	32.30	0.06	7.82
2	249	12.10	34.831	26.46	15			508	3	508	2.44	28.11	32.38	0.02	
2	296	11.51	34.777	26.53	6	3.44		524	1	524	2.58	31.37	32.59	0.02	7.69
2	345	10.91	34.757	26.62	4	3.14		532	1	532	2.64	34.26	30.12	0.05	
2	394	10.16	34.714	26.72	4	1.32		541	1	541	2.81	40.66	29.05	0.28	
2	490	8.53	34.645	26.94	4	0.93		562	1	562	3.11	54.84	26.56	1.18	7.66
2	592	7.29	34.603	27.09	3	1.53		581	0	581	3.29	63.88	35.52	0.03	
2	691	6.60	34.590	27.17	4	2.80		589	1	589	3.32	70.66	38.48	0.01	
2	792	5.86	34.585	27.27	12	7.79		593	2	593	3.40	78.06	42.43	0.01	
2	991	4.87	34.584	27.39	44	35.06		576	7	576	3.40	91.74	41.43	0.00	7.70

T C THOMPSON CRUISE 024 STATION 038 OBSERVED VALUES

CAS	DEPTH	W3 UGAT/L	ALV MEG/L	CO2 MMOL/L
1	0		2.42	2.13
1	10		2.38	2.13
1	20			
1	30		2.40	2.27
1	40			
1	50		2.45	2.45
1	75		2.45	2.52
1	100			
1	125		2.45	2.52
1	150			
2	198		2.44	2.57
2	248			
2	296		2.44	2.55
2	345			
2	394			
2	490		2.46	2.59
2	592			
2	691			
2	792			
2	991		2.50	2.64

T G THOMPSON CRUISE 026				STATION 039				OBSERVED VALUES				WAVE PERIOD 2			
DATE	TIME	BARO	DRY	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND
05/02/68	205	1011.2	25.5	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
LAT	10-04.0N	TEMP	WET	REL	NUMID	0/00	SIGMAT	02	UGAT/L	02	UGAT/L	02	UGAT/L	02	UGAT/L
LONG	087-40.0W	TEMP	DEG.C	SAL	0/00	SIGMAT	02	UGAT/L	02	UGAT/L	02	UGAT/L	02	UGAT/L	02
CST	DEPTH	TEMP	DEG.C	SAL	0/00	SIGMAT	02	UGAT/L	02	UGAT/L	02	UGAT/L	02	UGAT/L	02
1	0	23.84	23.84	34.113	23.04	23.04	412	10	98	0.74	8.41	8.15	0.13	8.22	8.22
1	10	22.44	23.57	34.277	23.57	23.57	392	40	91	0.96	10.42	11.47	0.13	8.22	8.22
1	20	19.40	24.61	34.574	24.61	24.61	217	237	48	1.50	11.42	18.26	0.36		
1	30	16.63	25.45	34.791	25.45	25.45	133	344	28	1.86	18.82	29.53	0.22	8.03	8.03
1	40	14.11	26.09	34.886	26.09	26.09	26	475	5	2.28	23.34	29.19	0.27		
1	50	13.78	26.17	34.893	26.17	26.17	12	492	2	2.38	24.10	31.47	0.22	7.85	7.85
1	75	13.48	26.23	34.890	26.23	26.23	15	492	3	2.35	24.60	31.63	0.05	7.85	7.85
1	100	13.18	26.28	34.893	26.28	26.28	9	501	2	2.42	25.35	32.25	0.02		
1	125	12.86	26.34	34.871	26.34	26.34	12	503	2	2.42	26.23	33.71	0.03	7.86	7.86
1	150	12.63	26.38	34.864	26.38	26.38	11	506	2	2.42	27.48	32.42	0.02		
2	195	12.20	26.43	34.822	26.43	26.43	14	508	3	2.44	28.74	34.47	0.03	7.83	7.83
2	242	11.89	26.48	34.815	26.48	26.48	12	513	2	2.50	29.99	34.07	0.01		
2	290	11.27	26.55	34.743	26.55	26.55	4	529	1	2.63	34.89	33.84	0.07	7.79	7.79
2	338	10.39	26.69	34.723	26.69	26.69	4	539	1	2.91	39.66	30.70	0.48		
2	387	9.72	26.79	34.708	26.79	26.79	4	547	1	2.96	45.68	27.59	1.15		
2	435	9.20	26.97	34.628	26.97	26.97	2	569	0	3.21	58.51	31.37	1.04	7.69	7.69
2	570	7.23	27.08	34.584	27.08	27.08	4	580	1	3.30	65.39	37.52	0.03		
2	677	6.47	27.17	34.572	27.17	27.17	6	590	1	3.33	71.91	37.55	0.06		
2	775	5.92	27.24	34.552	27.24	27.24	12	591	2	3.43	78.06	33.91	0.00		
2	972	4.86	27.37	34.563	27.37	27.37	35	584	6	3.41	93.87	37.36	0.00	7.75	7.75

T G THOMPSON CHUISE 026 STATION 039 OBSERVED VALUES

CAST	DEPTH	TEMP C/AT/L	ALK MEG/L	CO2 MM/L/L
1	0		2.41	2.22
1	10		2.41	2.28
1	20			
1	30		2.45	2.41
1	40			
1	50		2.44	2.52
1	75		2.45	2.59
1	100			
1	125		2.44	2.51
1	150			
2	195		2.45	2.58
2	242			
2	290		2.45	2.55
2	338			
2	387			
2	482		2.47	2.56
2	579			
2	677			
2	775			
2	972		2.47	2.61

T G THOMPSON CRUISE 026				STATION 040				OBSERVED VALUES								
DATE TIME LAT LONG	DEPTH	TEMP DEG.C	BARO TEMP DRY TEMP WET REL HUMID	1010.7 27.1 23.6 74	SIGMAT	WEATHER		O1 9	WIND VELOC 04	WAVE PERIOD 2						
						02 UGAT/L	02 UGAT/L			01 9	13 34	20 4518	SECCHI SOUNDING			
05/02/69 16.1 09-54.0N 086-27.0W																
2	0	27.27	33.900	21.83		407		-6	102		0.36	3.14	2.91	0.07	8.36	
2	10	23.81	34.190	23.11		343		79	81		0.73	6.90	8.13	0.11	6.29	
2	20	17.07	34.711	25.29		166		307	35		1.77	16.94	22.43	0.18		
2	30	14.51	34.889	26.01		51		446	10		2.20	21.94	28.53	0.13	7.95	
2	40	14.23	34.910	26.09		80		420	16		2.14	20.08	27.81	0.94		
2	50	14.04	34.914	26.13		62		440	12		2.14	21.21	28.40	0.60		
2	75	13.63	34.921	26.22		48		458	9		2.39	22.34	31.13	0.05	7.94	
2	100	13.32	34.908	26.27		52		457	10		2.21	22.59	30.52	0.03	7.92	
2	125	13.17	34.902	26.30		64		447	12		2.27	23.97	28.38	0.03		
2	150	13.00	34.889	26.33		54	43.73	459	10		2.25	24.10	30.07	0.02	7.90	
3	178	12.49	34.862	26.40		26	22.18	492	5		2.36	26.35	31.96	0.02	7.89	
3	247	11.93	34.823	26.48		22		503	4		2.42	28.49	32.98	0.05		
3	297	11.32	34.787	26.57		13	11.30	519	2		2.54	32.00	26.62	0.02	7.83	
3	346	10.67	34.742	26.65		4		535	1		2.67	35.89	32.25	0.02		
3	395	9.90	34.701	26.76		2	0.72	547	0		2.86	42.29	27.32	0.88		
3	474	8.09	34.629	26.99		4	0.76	569	1		3.13	57.86	28.79	0.88	7.73	
3	553	7.07	34.599	27.11		2	1.66	585	0		3.23	65.01	26.19	0.03		
3	632	6.25	34.584	27.21		13	10.03	585	2		3.32	73.17	38.89	0.02		
3	791	5.57	34.572	27.29		17	13.64	592	3		3.40	82.45	42.04	0.11		
3	983	4.61	34.571	27.47		57	50.62	566	9		3.40	96.89	40.88	0.13	7.77	
1	2279	1.99	34.661	27.72		215		452	52		2.72	145.83	35.94	0.07		
1	3054	1.82	34.676	27.75		237		437	35		2.75	149.09	37.43	0.01		
1	3638	1.91	34.674	27.74		237		431	36		2.73	149.09	36.78	0.03		
1	4003	1.96	34.672	27.73		238		429	36		2.74	148.72	37.36	0.00		
1	4404	2.00	34.676	27.73		239		427	36		2.74	148.22	36.72	0.01		

T. G. THOMPSON, CRUISE 326 STATION 240 OBSERVED VALUES

CST	DEPT	ALK MFC/L	CO2 MMOL/L
2	0	2.34	2.23
2	10	2.36	2.30
2	20		
2	30	2.41	2.54
2	40		
2	50		2.58
2	75	2.40	2.58
2	100	2.40	
2	175		2.59
2	150	2.62	
3	199	2.42	2.62
3	247		
3	297	2.41	2.66
3	346		
3	395		
3	494	2.43	2.71
3	593		
3	692		
3	791		
3	993	2.47	2.73
1	2279		
1	3084		
1	3688		
1	4093		
1	4496		

T G THOMPSON CRUISE 026				STATION 041				OBSERVED VALUES			
DATE	11/02/68	BAKO	1010.4	WEATHER	X0	WIND VELOC	06	WAVE PERIOD	3		
HOUR	14.6	TEMP DRY	23.3	VISIBILITY	8	WIND DIREC	03	SECHING	13		
LAT	08-54.0N	TEMP WET	21.8	CLOUD TYPE	0	WAVE DIREC	05	SOUNDING	3181		
LONG	097-50.0W	REL HUMID		CLOUD AMT	0	WAVE HEIGHT	2				
CAST	DEPTH	TEMP	SAL	SIGMAT	02	02	02	04	03	02	PH
		DEG.C	0700		UGAT/L	UGAT/L	SATN	UGAT/L	UGAT/L	UGAT/L	
1	0	21.81	34.442	23.87	386		89	0.98	9.91	11.21	8.15
1	10	19.02	34.691	24.80	269		59	1.47	14.43	18.99	8.03
1	20	14.42	34.916	26.05	52		10	2.13	20.21	28.86	
1	30	14.26	34.913	26.08	58		12	2.16	20.58	29.50	7.83
1	40	14.02	34.900	26.12	38		8	2.28	20.96	30.50	
1	50	13.81	34.894	26.16	36		7	2.29	22.34	30.55	7.63
1	75	13.35	34.898	26.26	35		7	2.29	23.59	31.20	7.82
1	100	13.09	34.899	26.31	36	23.59	7	2.31	23.84	31.57	
1	125	12.97	34.890	26.32	40	16.70	8	2.33	24.85	31.62	7.82
1	150	12.84	34.886	26.36	36	20.95*	7	2.36	25.35	28.54*	
2	200	12.42	34.857	26.42	15	11.01	3	2.36	27.36	31.20	7.75
2	251	11.91	34.821	26.49	22	15.64	4	2.44	29.62	31.84	
2	300	11.33	34.721	26.56	15	4.67	3	2.59	32.25	32.36	7.71
2	350	10.52	34.742	26.68	7	3.78	1	2.71	36.39	32.26	
2	400	9.59	34.684	26.79	7	0.21	1	3.13	45.93	29.36	
2	501	8.19	34.633	26.98	4	0.68	1	3.14	55.85	33.47	7.66
2	599	7.03	34.602	27.12	13	4.46	2	3.23	63.88	38.76	
2	700	6.35	34.592	27.20	25	16.79	4	3.27	71.16	40.16	
2	800	5.71	34.566	27.27	23	17.25	4	3.37	80.45	41.97	
2	1002	4.63	34.569	27.40	60	42.63	10	3.43	96.51	42.35	7.65

DATE TIME LAT LONG	11/02/68 22.6 CP-59.0N 088-23.0W	T G THOMPSON CRUISE 026				STATION 042				OBSERVED VALUES							
		WIND DRY TEMP	WIND WET TEMP	REL HUMID	SIGMAT	O2 UGAT/L	WEATHER VISIBILITY CLOUD TYPE CLOUD AMT	O2 UGAT/L	X1 UGAT/L	WIND VELOC WIND DIREC WAVE DIREC WAVE HEIGHT	ACU UGAT/L	O/C O2 SATN	P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L	PH
CST	DEPTH	TEMP DEG.C	SAL P/00														
1	0	21.44	34.589	24.08		398				40	91	1.22	12.42	14.88	0.29	8.66	
1	10	20.65	34.584	24.29		401				43	90	1.23	12.05	15.20	0.17	8.67	
1	20	19.85	34.600	24.24		232				227	51	1.73	15.44	18.74	0.29		
1	30	18.73	34.605	25.08		53				442	11	2.13	20.46	20.87	0.46	7.83	
1	40	14.24	34.927	26.10		38				461	8	2.21	20.33	26.28	0.11		
1	50	13.98	34.925	26.15		38				464	4	2.22	21.21	34.03	0.05	7.61	
1	75	13.76	34.919	26.19		49				456	10	2.21	21.84	31.08	0.03	7.63	
1	101	13.49	34.928	26.26		37				470	7	2.21	22.46	31.07	0.03		
1	126	13.23	34.903	26.29		52				458	10	2.35	23.59	26.87	0.02	7.80	
1	151	13.04	34.890	26.32		37				475	7	2.28	23.97	34.25	0.02		
2	177	12.58	34.865	26.39		38				480	7	2.36	25.23	30.54	0.02	7.75	
2	227	12.06	34.830	26.46		30				494	6	2.40	27.61	31.87	0.01		
2	295	11.47	34.789	26.54		14				516	3	2.54	30.50	29.25	0.00	7.73	
2	345	10.74	34.753	26.61		15				522	3	3.32*	33.13*	37.18	0.00		
2	394	10.16	34.713	26.72		15				531	3	2.76	39.03	32.85	0.02		
2	473	9.56	34.637	26.72		13				553	2	3.09	54.22	32.35	1.15	7.64	
2	502	7.33	34.605	27.08		7				576	1	3.27	62.50	37.42	0.02		
2	592	6.40	34.569	27.18		22				574	4	3.32	71.16	42.72	0.00		
2	793	5.72	34.566	27.27		30				577	5	3.45	79.94	45.61	0.00		
2	995	4.70	34.571	27.39		52				570	9	3.43	95.76	43.30	0.00	7.63	



T. G. THOMPSON: CRUISE 026 STATION 042 OBSERVED VALUES

CST	DEPTH	SiH <sub>3</sub> UGAT/L	ALK MEQ/L	CO <sub>2</sub> UMOL/L
1	0		2.439	
1	10		2.442	
1	20			
1	30		2.443	
1	40			
1	50		2.444	
1	75			
1	101			
1	126		2.444	
1	151			
2	197		2.443	
2	247			
2	295		2.444	
2	345			
2	394			
2	493		2.448	
2	592			
2	692			
2	793			
2	995		2.450	

[illegible]

T G THOMPSON CRUISE 026 STATION 043 OBSERVED VALUES

CAST	DEPTH	PH3 MICAT/L	ALK MEG/L	CO2 MMOL/L
1	0			
1	10			
1	20			
1	30			
1	40			
1	50			
1	76			
1	101			
1	126			
1	151			
2	197	2.41	2.29	
2	247			
2	297	2.37	2.32	
2	346			
2	397		2.32	
2	445			
2	495	2.39	2.37	
2	544			
2	593			
2	693			
2	791			
2	990			

T G THOMPSON CRUISE 026				STATION 044				OBSERVED VALUES				WAVE PERIOD 3			
DATE	TIME	BARO	1008.8	WEATHER	02	02	02	WIND VELOC	04	05	05	WAVE PERIOD	3	3338	3338
HOUR	00	TEMP	DRY	22.9	VISIBILITY	8	8	WIND DIREC	05	05	05	WAVE PERIOD	3	3338	3338
LAT	08-55.0N	TEMP	WET	22.0	CLOUD TYPE	9	9	WAVE DIREC	05	05	05	WAVE PERIOD	3	3338	3338
LONG	089-34.0W	REL HUMID	92	92	CLOUD AMT	9	9	WAVE HEIGHT	1	1	1	WAVE PERIOD	3	3338	3338
CAST	DEPTH	TEMP	SAL	SIGMAT	02	02	02	AQU	04	05	05	WAVE PERIOD	3	3338	3338
		DEG.C	0/00		UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L
1	0	22.27	34.499	23.78	423	423	9	98	1.19	1.19	1.19	9.99	13.32	0.21	8.18
1	10	22.28	34.498	23.78	422	422	10	98	1.17	1.17	1.17	10.11	14.89	0.19	8.20
1	10	21.99	34.509	23.87	426	426	9	98	1.19	1.19	1.19	11.21	15.52	0.20	8.18
1	29	21.76	34.523	23.94	414	414	22	95	1.21	1.21	1.21	10.84	13.60	0.19	8.18
1	39	16.00	34.881	25.68	147	147	336	30	1.77	1.77	1.77	16.93	22.82	0.10	7.95
1	48	14.74	34.908	25.98	104	104	390	21	1.96	1.96	1.96	19.00	25.91	0.30	7.94
1	73	13.24	34.922	26.18	58	58	445	11	2.19	2.19	2.19	21.56	29.12	0.08	7.92
1	98	13.56	34.918	26.23	38	38	468	8	2.22	2.22	2.22	22.65	28.24	0.05	7.89
1	122	13.33	34.913	26.24	59	59	450	12	2.12	2.12	2.12	22.29	27.90	0.03	7.85
1	146	13.11	34.904	26.32	63	63	449	12	2.21	2.21	2.21	23.26	29.95	0.02	7.85
2	194	12.70	34.872	26.37	44	44	472	9	2.33	2.33	2.33	25.70	30.25	0.05	7.85
2	244	12.25	34.847	26.44	28	28	493	5	2.40	2.40	2.40	29.14	30.79	0.03	7.85
2	293	11.58	34.804	26.54	26	26	503	5	2.50	2.50	2.50	30.21	32.57	0.02	7.85
2	343	10.79	34.756	26.64	18	18	520	3	2.65	2.65	2.65	34.23	32.69	0.03	7.85
2	393	10.16	34.724	26.73	21	21	524	4	2.72	2.72	2.72	38.12	32.96	0.03	7.85
2	442														
2	493	8.73	34.647	26.90	19	19	546	3	3.09	3.09	3.09	53.23	27.48	1.22	7.75
2	543														
2	592	7.11	34.598	27.11	13	13	573	2	3.26	3.26	3.26	65.77	38.31	0.04	7.75
2	693	6.32	34.578	27.20	15	15	583	2	3.30	3.30	3.30	72.47	44.76	0.02	7.75
2	793	5.71	34.565	27.27	30	30	576	5	3.38	3.38	3.38	81.24	42.59	0.02	7.75
2	894	4.70	34.570	27.39	67	67	555	11	3.38	3.38	3.38	94.03	39.44	0.02	7.75

T G THOMPSON CRUISE 020 STATION 044 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MFG/L	CO2 MMOL/L
1	0			
1	10			
1	19			
1	29			
1	39			
1	49			
1	73			
1	99			
1	122			
1	146			
2	194		2.36	
2	244			
2	293		2.36	
2	343			
2	393			
2	442			
2	493		2.39	
2	543			
2	592			
2	693			
2	793			
2	994			

DATE 12/02/68 HOUR 16.6 LAY 08-55.0N LONG 090-13.0W	CAST	DEPTH	T G THOMPSON CRUISE 026				STATION C45				OBSERVED VALUES				WAVE PERIOD 3 13 3292				PM
			TEMP DEG.C	SAL 0/00	SIGMAT	02 UGAT/L	02 UGAT/L	02 UGAT/L	02 UGAT/L	02 UGAT/L	WIND VELOC 05	WIND DIRECTION 04	WAVE DIRECTION 36	WAVE HEIGHT 1	P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L	
	1	0	24.04	34.483	23.26	442					-21	105			0.92	1.10	11.40	0.20	8.22
	1	10	23.86	34.483	23.31	444					-21	105			0.94	1.22	10.91	0.19	8.22
	1	20	23.72	34.476	23.35	439					-16	104			0.97	1.46	11.00	0.18	
	1	30	22.41	34.533	23.77	399					33	92			1.23	5.12	13.93	0.17	8.19
	1	40	16.63	34.854	25.51	170					307	36			1.81	16.56	22.43	0.09	
	1	50	14.47	34.919	26.04	65					433	13			2.09	19.61	26.94	0.47	7.93
	1	74	13.82	34.928	26.19	36					462	7			2.26	21.63	30.14	0.06	7.69
	1	99	13.57	34.926	26.24	40		25.88			467	8			2.26	25.09	30.73	0.04	
	1	124	13.36	34.915	26.27	37					472	7			2.28	22.90	30.89	0.04	7.89
	1	149	13.13	34.902	26.31	38		24.14			473	7			2.31	23.87	29.53	0.05	
	2	202	12.64	34.879	26.39	27		17.13			490	5			2.39	25.33	30.74	0.03	7.87
	2	254	11.92	34.823	26.49	19		14.92			506	4			2.47	28.52	33.23	0.03	
	2	305	11.19	34.780	26.59	16		11.73			517	3			2.62	31.30	33.21	0.03	7.81
	2	355	10.60	34.748	26.67	4		1.53			536	1			2.97	37.51	30.58	0.06	
	2	406	9.60	34.609	26.79	7		3.14			545	1			2.84	41.53	31.81	0.03	
	2	457						1.74			564						32.58	0.14	
	2	507	8.26	34.634	26.97	7		0.38			564	1			3.04	53.35	33.83	0.04	7.74
	2	559						2.12									34.38	0.03	
	2	609	7.01	34.596	27.12	7		2.08			581	1			3.28	64.68	35.93	0.03	
	2	711	6.24	34.582	27.21	16		7.27			582	3			3.34	71.50	42.54	0.03	
	2	811	5.54	34.569	27.29	26		18.74			593	4			3.40	78.93	42.23	0.02	
	2	1012	4.71	34.575	27.39	65		56.82			557	10			3.35	90.38	39.73	0.02	7.77



T G THOMPSON CRUISE C26				STATION C47			OBSERVED VALUES				WAVE PERIOD 3			
DATE	13/02/68	BARO	1009.8	WEATHER	X0	WIND VELOC	06	WIND DIREC	04	WAVE PERIOD	3	SECCHI	3200	
HOUR	08-54.0N	TEMP DRY	24.4	VISIBILITY	8	WIND DIREC	04	WAVE PERIOD	3	SECCHI	3200	WAVE SOUNDING	3200	
LONG	087-50.0W	REL HUMID	22.8	CLOUD TYPE	0	WAVE PERIOD	3	SECCHI	3200	WAVE SOUNDING	3200	WAVE PERIOD	3	
CST	DEPTH	TEMP DEG.C	SAL O/00	SIGMAT	O2 UGAT/L	O2 UGAT/L	WIND VELOC	06	WIND DIREC	04	WAVE PERIOD	3	SECCHI	3200
1	0	22.35	34.612	23.95	413	19	96	1.19	13.15	15.25	0.22	8.14		
1	10	20.40	34.610	24.38	387	59	87	1.23	12.79	14.16	0.12			
1	20	15.24	34.863	25.83	73	417	15	2.15	20.71	24.69	0.16			
1	30	14.29	34.914	26.09	45	454	9	2.18	21.07	30.94	0.12			
1	40	14.03	34.919	26.14	44	457	9	2.17	20.83	30.09	0.12			
1	50	13.79	34.922	26.19	36	468	7	2.20	21.68	29.06	0.03			
1	76	13.53	34.913	26.24	39	468	8	2.44	22.78	29.63	0.03			7.89
1	101	13.29	34.900	26.28	36	473	7	2.26	23.99	31.12	0.01			7.68
1	126	13.02	34.892	26.32	37	475	7	2.34	24.73	31.72	0.01			
1	151	12.49	34.893	26.35	42	472	8	2.28	24.36	29.03	0.01			
2	200	12.44	34.852	26.41		507	2	2.47	27.04	23.97*	0.02			7.84
2	250	11.86	34.813	26.49		505	4	2.44	28.38	31.66	0.00			
2	302	11.12	34.764	26.59		527	1	2.67	32.03	33.49	0.00			7.80
2	352	10.39	34.726	26.69		497	1	2.75	36.78	29.97	0.00			
2	402	9.57	34.690	26.80		553	0	2.96	43.85	28.68	0.23			7.73
2	451					2.17				38.22*	0.00			
2	502	8.07	34.626	26.99		573	0	3.18	56.88	34.36	0.01			7.73
2	552					4.59				29.83*	0.06			
2	603	7.00	34.597	27.12		579	2	3.21	63.46	38.00	0.00			7.72
2	703	6.23	34.579	27.21		577	4	3.30	70.52	40.48	0.00			
2	803	5.61	34.564	27.28	30	578	5	3.36	78.44	42.65	0.00			
2	1005	4.57	34.573	27.41	53	572	8	3.42	93.54	40.66	0.00			7.79



T G THOMPSON CRUISE 026 STATION 047 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.39	2.23
1	10			
1	20			
1	30			
1	40			
1	50		2.44	2.38
1	76		2.40	2.41
1	101			
1	126			2.41
1	151			
2	200		2.42	2.40
2	250			
2	302		2.41	2.45
2	352			
2	402		2.42	2.46
2	451			
2	502		2.43	2.49
2	552			
2	603		2.43	2.50
2	703			
2	803			
2	1005		2.47	2.57

DATE 14/07/68 HOUR 08-58.45 LAT 08-58.45 N LONG 088-22.0 W			T G THOMPSON CRUISE 026				STATION 048				OBSERVED VALUES				WAVE PERIOD SECCHI SOUNDING 3365			
CAST	DEPTH	TEMP DEG.C	SAL P/00	SIGMAT	WEATHER		O2 UGAT/L	O2 UCAT/L	WIND VELOC DIR WAVE DIR WAVE HEIGHT	C/O O2 SATN	AGU UGAT/L	P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L	PH		
					VISIBILITY CLOUD TYPE CLOUD AMT	WIND DRY TEMP WET REL HUMID												
1	0	21.34	34.581	24.10	411	411	28	94	94	28	1.47	11.33	16.51	0.26	8.13			
1	10	20.75	34.588	24.27	403	403	40	91	91	40	1.41	11.94	15.85	0.20				
1	20	15.04	34.864	25.88	29	29	463	6	6	463	2.38	20.34	28.81	0.28				
1	30	14.43	34.918	26.05	60	60	438	12	12	438	2.20	20.58	29.21	0.59				
1	40	14.16	34.922	26.11	51	51	449	10	10	449	2.16	21.07	30.45	0.23				
1	50	14.03	34.923	26.14	38	38	464	8	8	464	2.20	21.31	30.32	0.23		7.89		
1	75	13.72	34.921	26.20	39	39	466	8	8	466	2.25	22.05	30.81	0.05		7.87		
1	100	13.42	34.909	26.26	45	45	464	9	9	464	2.25	22.53	31.89	0.08				
1	125	13.18	34.900	26.30	47	47	464	9	9	464	2.25	23.51	30.87	0.06		7.89		
1	150	12.99	34.890	26.33	40	40	473	8	8	473	2.25	23.99	31.52	0.05				
2	201	12.49	34.859	26.40			497	4	4	497	2.41	26.67	31.06	0.11		7.84		
2	252	11.94	34.819	26.48			502	4	4	502	2.42	28.14	32.62	0.01				
2	302	11.43	34.786	26.55			516	3	3	516	2.50	31.06	33.31	0.01		7.81		
2	353	10.67	34.743	26.65			530	2	2	530	4.06*	32.16	32.86*	0.00				
2	403	9.98	34.704	26.74			547	0	0	547	2.90	40.19	31.53	0.00		7.76		
2	453													32.97	0.11			
2	504	8.02	34.619	26.99			571	0	0	571	3.18	57.73	34.56	0.57		7.73		
2	554													36.54	0.04			
2	603	6.91	34.585	27.12			587	0	0	587	3.31	64.68	38.39	0.01		7.69		
2	705	6.13	34.567	27.22			591	2	2	591	3.33	72.84	41.81	0.00				
2	805	5.51	34.565	27.29	26	26	584	4	4	584	3.46	81.24	43.24	0.00				
2	1007	4.45	34.566	27.41	46	46	580	7	7	580	3.61	96.71	45.88	0.01		7.71		

OBSERVED VALUES

STATION: 042

T G THOMPSON CRUISE 026

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.41	2.26
1	10			
1	20			
1	30			
1	40			
1	50		2.41	2.38
1	75		2.41	2.39
1	100			
1	125		2.41	2.43
1	150			
2	201		2.39	2.41
2	252			
2	302		2.41	2.42
2	353			
2	403		2.40	2.46
2	453			
2	504		2.45	2.52
2	554			
2	603		2.43	2.53
2	705			
2	805			
2	1007		2.48	2.54

T G THOMPSON CRUISE 326				STATION 049				OBSERVED VALUES					
DATE		14/02/68	BARO	1011.8	WEATHER	X1	WIND VELOC	03	WAVE PERIOD		3	PH	
HOUR	12.7	TEMP DRY	24.5	VISIBILITY	8	WIND DIREC	07	SECCHI	25				
LAT	08-56.0N	TEMP WET	23.2	CLOUD TYPE	6	WAVE DIREC	03	SOUNDING	3329				
LONG	089-08.0W	REL HUMID	90	CLOUD AFT	5	WAVE HEIGHT	2						
CST	DEPTH	TEMP DEG C	SAL 0/00	SIGMAT	O2 UGAT/L	O2 UGAT/L	O/O O2 SATN	PO4 UGAT/L	SIO4 UGAT/L	NO3 UGAT/L	NO2 UGAT/L		
1	0	22.53	34.579	23.77	416	416	97	1.28		15.28	0.23	8.13	
1	10	21.54	34.563	24.03	410	410	94	1.26		15.49	0.16		
1	20	21.23	34.565	24.12	394	394	90	1.37		16.20	0.16		
1	30	20.34	34.602	24.39	376	376	84	1.43		17.18	0.16		
1	40	14.84	34.912	25.96	119	119	24	1.92		25.64	0.03		
1	50	14.25	34.939	26.10	73	73	15	2.12		29.81	0.30	7.90	
1	75	13.83	34.924	26.18	55	55	11	2.22		30.80	0.06	7.88	
1	100	13.63	34.923	26.22	44	30.56	9	2.23		31.57	0.04		
1	125	13.36	34.917	26.27	51	39.61	10	2.24		30.77	0.03	7.87	
1	150	13.15	34.906	26.31	50	38.55	10	2.26		31.42	0.02		
2	199	12.68	34.875	26.38		17.21	3	2.39		33.07	0.01	7.83	
2	249	11.99	34.829	26.48		17.93	3	2.48		34.12	0.02		
2	298	11.23	34.784	26.58		16.45	3	2.63		33.14	0.01	7.80	
2	348	10.68	34.748	26.66		11.77	2	3.57*		34.26	0.15		
2	400	10.14	34.727	26.73		7.82	1	2.77		33.54	0.03	7.75	
2	449					2.97				31.91	0.60		
2	499	8.29	34.638	26.97		0.93	0	3.25		32.71	0.53	7.71	
2	549					3.36				37.09	0.11		
2	599	7.08	34.594	27.11		1.70	0	3.32		38.88	0.19	7.72	
2	700	6.31	34.579	27.20		5.82	1	3.38		43.13	0.15		
2	801	5.62	34.569	27.28	25	12.41	4	3.62		43.41	0.12		
2	1002	4.56	34.568	27.40	60	47.05	10	3.48		44.52	0.18	7.72	

T G THOMPSON CRUISE 026 STATION 049 OBSERVED VALUES

CYST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.38	2.21
1	10			
1	20			
1	30			
1	40			
1	50		2.38	2.35
1	75		2.38	2.37
1	100			
1	125		2.38	2.38
1	150			
2	199		2.38	2.46
2	249			
2	298		2.39	2.43
2	348			
2	400		2.42	2.46
2	449			
2	499		2.41	2.53
2	549			
2	599		2.44	2.55
2	700			
2	801			
2	1002		2.47	2.57

T G THOMPSON CRUISE 026				STATION 050				OBSERVED VALUES				WAVE PERIOD 12 SECONDS 3310			
DATE 14/02/68	TIME 17.6	BARO DRY 1012.6	WIND VELOC 11	WEATHER X0	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70
LAT 08-55.4 N	LONG 089-34.4 W	TEMP 28.5	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70
		TEMP WET 24.5	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70
		REL HUMID 72	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70	WIND DIREC 70
CST	DEPTH	TEMP DEG.C	SAL G/100	SIGMAT	O2 UGAT/L	O2 UGAT/L	O2 UGAT/L	AGU UGAT/L	O2 UGAT/L	O2 UGAT/L	O2 UGAT/L	P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L
1	0	23.20	34.425	23.46	463	463	463	-36	109	109	109	1.50	4.14	12.78	0.21
1	10	22.86	34.451	23.58	452	452	452	-29	107	107	107	1.07	6.33	11.21	0.18
1	20	22.21	34.511	23.78	444	444	444	-11	103	103	103	1.23	8.28	13.42	0.20
1	30	16.68	34.850	25.49	193	193	193	283	41	41	41	1.73	15.59	23.82	0.09
1	40	14.80	34.896	25.95	130	130	130	364	26	26	26	1.91	19.76	24.97	0.20
1	50	14.30	34.911	26.07	112	112	112	387	22	22	22	2.01	19.61	25.37	0.48
1	75	13.25	34.928	26.18	42	42	42	461	8	8	8	2.29	21.44	25.89	0.08
2	101	13.65	34.931	26.22	38	38	38	463	7	7	7	2.21	22.41	29.78	0.05
2	126	13.36	34.913	26.27	39	39	39	469	8	8	8	2.32	22.90	31.56	0.04
2	151	13.16	34.903	26.31	45	45	45	466	9	9	9	2.36	23.39	30.52	0.03
3	202	12.67	34.874	26.38				500	3	3	3	2.40	25.94	31.11	0.03
3	253	12.02	34.830	26.47				513	2	2	2	2.54	28.50	31.18	0.00
3	303	11.35	34.794	26.57				527	1	1	1	2.50	28.62	31.01	0.00
3	353	10.54	34.739	26.67				535	1	1	1	2.87	34.47	33.62	0.00
3	405	9.96	34.713	26.75				543	1	1	1	2.80	38.98	33.41	0.00
3	456							569	0	0	0	3.20	52.86	27.49	1.01
3	506	8.35	34.636	26.96				569	0	0	0	3.20	52.86	29.07	1.11
3	557							586	0	0	0	3.33	61.39	35.17	0.04
3	607	7.03	34.594	27.12				592	1	1	1	3.38	69.55	39.28	0.01
3	710	6.19	34.574	27.21				587	4	4	4	3.47	75.88	32.68*	0.01
3	811	5.50	34.564	27.29	23	23	23	597	4	4	4	3.46	88.06	42.17	0.02
3	1012	4.64	34.571	27.40	26	26	26	597	4	4	4	3.46	88.06	42.17	0.02

T G THOMPSON CRUISE 026 STATION 050 OBSERVED VALUES

CST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.37	2.24
1	10			
1	20			
1	30			
1	40			
1	50		2.40	2.36
1	75		2.39	2.46
2	101		2.39	2.46
2	126			
2	151			
3	202		2.39	2.47
3	253			
3	303		2.40	2.47
3	353			
3	405		2.40	2.50
3	456			
3	506		2.45	2.56
3	557			
3	607		2.42	2.56
3	710			
3	811			
3	1012		2.45	2.60

T G THOMPSON CRUISE 026				STATION 051				OBSERVED VALUES				WAVE PERIOD 3			
DATE 14/C2/68				PARO 1009.3				WEATHER X1				SECCHI			
TIME 23.4				TEMP DRY 25.1				VISIBILITY 8				SOUNDING 3272			
LAT 08-51.0N				TEMP WET 23.9				CLOUD TYPE 0							
LONG 090-15.0W				REL HUMID 70				CLOUD AMT 1							
CAST	DEPTH	TEMP DEG.C	SAL	SIGM.T	C2 UGAT/L	C2 UGAT/L	AQU UGAT/L	0/0 02 SATN	P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L	PH		
1	0	24.18	34.478	23.21	471	471	-51	112	1.10	3.04	10.00	0.17	8.23		
1	10	24.13	34.487	23.24	460	460	-40	110	1.35	3.41	10.48	0.15			
1	20	23.79	34.538	23.38	466	466	-43	111	1.07	2.68	11.83	0.15			
1	30	20.83	34.503	24.18	396	396	47	89	1.54	10.60	14.39	0.11			
1	40	17.66	34.810	25.23	214	214	254	46	1.91	12.79	20.40	0.06			
1	50	14.66	34.908	25.99	53	53	443	11	2.10	19.49	25.74	0.49	7.93		
1	75	13.94	34.912	26.15	35	35	468	7	2.86*	21.56	29.72	0.03	7.92		
1	100	13.52	34.908	26.22	45	45	461	9	2.55*	22.41	28.77	0.01			
1	125	13.28	34.895	26.27	37	37	473	7	2.30	23.75	29.53	0.01	7.91		
1	150	12.99	34.886	26.33	30	30	482	6	2.40	23.99	31.18	0.00			
2	197	12.49	34.856	26.40			505	3	2.45	27.16	31.55	0.05	7.87		
2	247	11.83	34.817	26.50			511	3	2.54	29.23	30.75	0.01			
2	296	10.99	34.765	26.61			525	2	2.73	33.13	31.01	0.00	7.83		
2	345	10.49	34.740	26.68			538	1	3.62*	38.98	30.95	0.02			
2	396	9.70	34.699	26.79			548	1	3.34*	41.66	32.35	0.01	7.78		
2	446						567				27.97	0.82			
2	496	8.42	34.637	26.95			585	0	3.10	53.10	30.86	0.02	7.74		
2	546						590				33.61	0.01			
2	595	7.03	34.592	27.11			590	0	3.32	64.19	37.61	0.00	7.73		
2	697	6.36	34.575	27.19			584	1	3.56	70.40	39.16	0.00			
2	797	5.72	34.570	27.27	23	23	557	4	3.52	77.46	39.69	0.02			
2	1000	4.69	34.573	27.39	65	65		11	3.28	91.96	36.05*	0.00	7.77		



**F/6 8/10**

PHYSICAL, CHEMICAL, AND PRODUCTIVITY DATA FROM AN INVESTIGATION--ETC(U)  
FEB 71 F A RICHARDS, R C DUGDALE, M L HEALY NONR-477(37)

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2 OF 2

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506

T G THOMPSON CRUISE 026 STATION 051 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.39	2.24
1	10			
1	20			
1	30			
1	40			
1	50		2.39	2.49
1	75		2.41	2.49
1	100			
1	125		2.44	2.52
1	150			
2	197		2.41	2.48
2	247			
2	296		2.42	2.54
2	345			
2	396		2.42	2.58
2	446			
2	496		2.45	2.55
2	546			
2	595		2.45	2.59
2	697			
2	797			
2	1000		2.48	2.64

DATE HOUR LAT LONG	16/02/69 000 08-42.0 N 087-10.0 W	T G THOMPSON CRUISE 026				STATION 052				OBSERVED VALUES				WAVE PERIOD 3 SECCHI SOUNDING 3064			
		TEMP DEG.C	SAL O/100	SIGMAT	O2 UGAT/L	WEATHER VISIBILITY 8 CLOUD TYPE X CLOUD AMT 9	O2 UGAT/L	ACU UGAT/L	O/O O2 SAT%	P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L	PH			
CAST	DEPTH																
1	0	24.85	34.364	22.93		399		16	36	0.86	7.43	9.69	0.19	8.22			
1	10	18.64	34.733	24.93		258		202	56	1.41	12.91	18.06	0.14	8.11			
1	20	15.04	34.915	25.92		167		325	34	1.73	15.71	23.05	0.06				
1	30	14.46	34.912	26.04		111		396	22	1.93	17.90	26.06	0.20	7.98			
1	40	14.12	34.923	26.12		55		446	11	2.16	19.37	29.13	0.12				
1	50	13.97	34.932	26.16		54		448	11	2.14	21.19	29.26	0.07	7.93			
1	75	13.61	34.927	26.23		61		445	12	2.13	20.83	28.76	0.02	7.93			
1	100	13.37	34.909	26.27		43	33.70	465	9	2.19	22.65	28.88	0.03	7.91			
1	125	13.17	34.907	26.31		41	33.06	470	8	2.21	23.02	30.60	0.03	7.93			
1	150	12.89	34.884	26.34		21	12.79	493	4	2.30	23.75	31.85	0.04				
2	199	12.41	34.855	26.42			31.45	488	6	2.29	24.36	30.98	0.03				
2	249	11.94	34.822	26.50			35.40	490	7	2.34	26.67	31.20	0.02				
2	299	11.24	34.782	26.58			17.72	515	3	2.50	29.96	33.02	0.01				
2	348	10.45	34.734	26.69			6.97	535	1	2.65	34.35	32.72	0.01	7.81			
2	399	9.66	34.695	26.79			5.69	546	1	2.81	40.07	33.41	0.00				
2	449						0.85					31.14	0.08				
2	499	8.18	34.628	26.97			1.32	570	0	3.11	54.20	32.09	0.78	7.77			
2	549						1.70					36.07	0.03				
2	599	6.97	34.595	27.13			3.57	545	1	3.21	62.73	29.33	0.00				
2	701	6.17	34.579	27.22			10.41	589	2	3.45	71.01	41.64	0.00				
2	801	5.57	34.573	27.29		28	17.21	521	5	3.35	79.20	43.51	0.02				
2	1002	4.46	34.569	27.42		60	47.39	566	10	3.33	96.22	42.67	0.02	7.78			

T G THOMPSON CRUISE 026 STATION 052 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.40	2.24
1	10		2.41	2.35
1	20			
1	30		2.42	2.42
1	40			
1	50		2.41	2.45
1	75		2.42	2.43
1	100		2.42	2.45
1	125		2.45	2.45
1	150			
2	199			
2	249			
2	299			
2	348		2.43	2.52
2	399			
2	449			
2	499		2.45	2.57
2	549			
2	599			
2	701			
2	801			
2	1002		2.49	2.59

T G THOMPSON CRUISE 026				STATION 053				OBSERVED VALUES				WAVE PERIOD 3			
DATE	16/02/68	BARO	1009.0	WEATHER	04	WIND VELOC	04	WIND DIR	06	WAVE DIR	36	WAVE PERIOD	3	WAVE PERIOD	3
HOUR	08-54:00	TEMP	23.5	WISIBILITY	8	WIND DIR	06	WAVE DIR	36	WAVE DIR	36	WAVE PERIOD	3	WAVE PERIOD	3
LAT	08-54:00 N	TEMP	22.8	CLOUD TYPE	9	WAVE DIR	36	WAVE DIR	36	WAVE DIR	36	WAVE PERIOD	3	WAVE PERIOD	3
LONG	08-50:00 W	REL HUMID	22.8	CLOUD AMT	9	WAVE DIR	36	WAVE DIR	36	WAVE DIR	36	WAVE PERIOD	3	WAVE PERIOD	3
CST	DEPTH	TEMP	SAL	SIGMAT	02	02	02	02	02	02	02	02	02	02	02
		DEG.C	O/00		UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L
1	0	21.52	34.654	24.11	416	21	95	1.14	12.30	16.03	0.15	8.15	0.15	0.15	0.15
1	10	17.68	34.738	25.17	273	195	5P	1.40	13.40	18.88	0.03		0.03	0.03	0.03
1	20	14.74	34.868	25.25	6	489	1	2.30	22.17	30.2P	0.19		0.19	0.19	0.19
1	30	13.98	34.890	26.12	14	488	3	2.24	22.29	31.45	0.62	7.87	0.62	0.62	0.62
1	40	13.88	34.894	26.15	33	470	7	2.19	20.83	29.74	0.05		0.05	0.05	0.05
1	50	13.70	34.916	26.20	46	459	9	2.08	20.46	29.78	0.01	7.90	0.01	0.01	0.01
1	75	13.42	34.91P	26.26	40	463	9	2.04	21.44	30.65	0.02	7.91	0.02	0.02	0.02
1	100	13.25	34.907	26.29	30	480	6	2.15	22.29	30.80	0.00	7.88	0.00	0.00	0.00
1	125	13.04	34.898	26.32	30	482	6	2.19	23.63	30.83	0.01	7.89	0.01	0.01	0.01
3	149	12.97	34.888	26.33	62	451	12	2.27	23.75	30.94	0.00		0.00	0.00	0.00
3	198	12.39	34.958	26.42		511	2	2.29	25.31	32.47	0.01	7.84	0.01	0.01	0.01
3	250	11.74	34.816	26.51		514	2	2.32	28.26	32.60	0.01		0.01	0.01	0.01
3	300	11.21	34.781	26.59		519	3	2.45	33.13	33.03	0.00		0.00	0.00	0.00
4	354	9.93	34.714	26.76		548	0	2.76	39.95	32.36	0.12		0.12	0.12	0.12
4	405	9.07	34.665	26.86		559	0	2.86	45.65	31.09	0.26		0.26	0.26	0.26
4	456														
4	507	7.64	34.618	27.05		578	0	3.09	57.85	33.93	0.11		0.11	0.11	0.11
4	557														
4	608	6.81	34.599	27.15		580	2	3.16	64.07	34.18	0.02	7.74	0.02	0.02	0.02
4	708	6.20	34.587	27.22		576	4	3.16	70.52	37.84	0.15		0.15	0.15	0.15
4	809	5.62	34.573	27.28	30	578	5	3.26	79.66	41.16	0.21		0.21	0.21	0.21
4	1012	4.60	34.572	27.40	55	569	9	3.31	94.76	38.87	0.01		0.01	0.01	0.01
										40.37	0.05		0.05	0.05	0.05
										42.73					

T G THOMPSON CRUISE 026 STATION 053 OBSERVED VALUES

CST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.43	2.26
1	10			
1	20			
1	30		2.43	2.41
1	40			
1	50		2.42	2.40
1	75		2.44	2.40
1	100		2.46	2.45
1	125		2.44	2.49
3	149			
3	198		2.44	2.46
3	250			
3	300		2.44	2.49
4	354			
4	405			
4	456			
4	507		2.46	2.53
4	557			
4	608			
4	708			
4	809			
4	1012		2.50	2.62

T G THOMPSON CRUISE 026				STATION 054				OBSERVED VALUES				WAVE PERIOD 3 SECCAL 14 SQUARING 3200			
DATE	TIME	BARO	TEMP	REL	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND
16/02/68	19:08	1010.7	23.5	23.0	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
09-30.0N	09-30.0N	23.0	23.0	23.0	WET	WET	WET	WET	WET	WET	WET	WET	WET	WET	WET
LONG	088-25.5W	REL	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND
CAST	DEPTH	TEMP	SAL	SIGMA	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND
1	0	22.82	34.444	23.59	419	419	419	419	419	419	419	419	419	419	419
1	10	22.60	34.441	23.64	419	419	419	419	419	419	419	419	419	419	419
1	20	20.49	34.475	24.25	338	338	338	338	338	338	338	338	338	338	338
1	30	19.04	34.657	24.77	325	325	325	325	325	325	325	325	325	325	325
1	40	15.97	34.963	25.67	123	123	123	123	123	123	123	123	123	123	123
1	50	14.79	34.864	25.93	20	20	20	20	20	20	20	20	20	20	20
1	75	13.53	34.984	26.21	19	19	19	19	19	19	19	19	19	19	19
1	100	13.28	34.890	26.27	24	24	24	24	24	24	24	24	24	24	24
1	126	12.95	34.872	26.32	30	30	30	30	30	30	30	30	30	30	30
1	151	12.80	34.874	26.35	33	33	33	33	33	33	33	33	33	33	33
2	202	12.26	34.840	26.43	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56
2	252	11.67	34.798	26.51	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
2	303	11.12	34.773	26.60	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
2	353	10.09	34.712	26.73	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
2	405	9.44	34.681	26.92	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
2	455				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
2	505	7.84	34.622	27.02	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
2	557				1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83
2	607	6.87	34.588	27.13	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2	708	6.06	34.574	27.23	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
2	810	5.39	34.573	27.31	22	22	22	22	22	22	22	22	22	22	22
2	1007	4.40	34.572	27.43	61	61	61	61	61	61	61	61	61	61	61

T G THOMPSON CRUISE 026 STATION 054 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.38	2.23
1	10			
1	20			
1	30		2.40	2.31
1	40			
1	50		2.41	2.44
1	75		2.40	2.46
1	100		2.41	2.46
1	126		2.41	2.45
1	151			
2	202		2.41	2.48
2	252			
2	303		2.42	2.48
2	353			
2	405			
2	455			
2	505		2.44	2.56
2	557			
2	607			
2	708			
2	810			
2	1007		2.48	2.60



[illegible]

T G THOMPSON CRUISE 026 STATION 055 OBSERVED VALUES

CST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.42	2.17
1	10		2.42	2.21
1	20			
1	30		2.42	2.41
1	40			
1	50		2.42	2.42
1	75		2.42	2.44
1	100		2.43	2.43
1	125		2.42	2.42
1	150			
2	197		2.43	2.45
2	248			
2	297		2.44	2.48
2	345			
2	396			
2	445			
2	496		2.43	2.55
2	545			
2	594			
2	693			
2	794			
2	993		2.50	2.55

[illegible]

T. S. THOMPSON CRUISE 026 STATION 056 OBSERVED VALUES

CAST	DEPTH	PH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.38	2.15
1	10			
1	20			
1	30		2.43	2.36
1	40			
1	50		2.43	2.46
1	75		2.43	2.46
1	100		2.43	2.45
1	125		2.43	2.45
1	150			
2	201		2.44	2.49
2	252			
2	301			2.47
2	350			
2	401			
2	451			
2	502		2.46	2.54
2	551			
2	602			
2	703			
2	804			
2	1004		2.50	2.61

T G THOMPSON CRUISE 026				STATION 057				OBSERVED VALUES				WAVE PERIOD 3			
DATE	17/02/68	PARO DRY	1009.7	WEATHER	X1	WIND VELOC	07	WIND DIREC	08	WAVE DIREC	02	WAVE PERIOD	3	SECCHI	
LAT	08-53.0N	TEMP	22.5	VISIBILITY	8	WIND DIREC	08	WAVE DIREC	02	WAVE DIREC	02	SOUNDING	3292		
LONG	088-50.0W	REL HUMID	22.3	CLOUD TYPE	0	WAVE HEIGHT	2	WAVE HEIGHT	2						
CST	DEPTH	TEMP	SAL	SIGMAT	02	UGAT/L	02	UGAT/L	02	UGAT/L	02	UGAT/L	02	UGAT/L	PH
1	0	22.59	34.547	23.73	461										8.11
1	10	22.57	34.549	23.73	462										0.26
1	20	21.30	34.551	24.09	416										0.26
1	30	15.68	34.853	25.73	27										0.26
1	40	14.38	34.894	26.04	73										0.22
1	50	14.07	34.918	26.13	51										0.64
1	75	13.69	34.925	26.21	34										0.41
1	100	13.43	34.917	26.26	23										0.06
1	125	13.22	34.900	26.29	29										0.06
1	150	12.97	34.892	26.33	32										0.05
2	200	12.47	34.853	26.40											0.05
2	250	11.28	34.815	26.49											0.06
2	299	11.30	34.791	26.57											0.06
2	348	10.48	34.730	26.68											0.05
2	399	9.59	34.690	26.80											0.05
2	449														0.09
2	499	8.11	34.625	26.98											0.89
2	548														0.04
2	598	6.96	34.589	27.12											0.04
2	698	6.21	34.575	27.21											0.05
2	793	5.52	34.564	27.29											0.05
2	992	4.50	34.563	27.41											0.05

T G THOMPSON CRUISE 026 STATION 057 OBSERVED VALUES

CAST	DEPTH	NH3 USAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.39	2.27
1	10			
1	20			
1	30		2.42	2.45
1	40			
1	50		2.42	2.46
1	75		2.42	2.51
1	100		2.43	2.48
1	125		2.42	2.48
1	150			
2	200			2.48
2	250			
2	299		2.43	2.52
2	348			
2	399			
2	449			
2	499		2.43	2.52
2	548			
2	598			2.58
2	698			
2	798			
2	999		2.48	

DATE 17/02/69			T G THOMPSON			CRUISE 226			STATION 258			OBSERVED VALUES		
TIME	1903	1903	SEA	TEMP	DRY	24.9	WIND	VELOC	10	WAVE	PERIOD	3		
LAT	08-55.04	08-55.04	TEMP	24.9	WIND	DRY	WIND	DRY	09	WAVE	PERIOD	09		
LONG	089-26.34	089-26.34	TEMP	23.0	WIND	DRY	WIND	DRY	03	WAVE	PERIOD	3329		
			REL	HUMID	23.0	WIND	DRY	WIND	DRY	WAVE	PERIOD	3329		
CST	DEPTH	TEMP	SAL	SIGMAT	Q2	Q2	Q2	Q2	Q2	Q2	Q2	Q2	Q2	Q2
		DEG.C	O/100		UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L
1	0	23.17	34.439	23.48	495									8.16
1	10	22.92	34.436	23.55	496									0.24
1	20	19.66	34.624	24.58	268									0.24
1	30	15.22	34.885	25.84	122									0.27
1	40	14.51	34.913	26.03	67									0.14
1	50	14.10	34.912	26.12	61									0.83
1	75	13.69	34.918	26.21	46									0.18
1	100	13.40	34.911	26.26	62									0.05
1	125	13.18	34.905	26.30	33									0.03
1	150	12.89	34.893	26.34	30									0.02
2	200	12.48	34.854	26.40										0.02
2	252	11.81	34.811	26.50										0.02
2	302	11.20	34.775	26.58										0.02
2	352	10.39	34.729	26.69										0.01
2	403	9.69	34.686	26.78										0.01
2	452													0.01
2	504	7.90	34.659	27.00										0.88
2	554													0.40
2	604	6.27	34.584	27.13										0.02
2	705	6.30	34.567	27.19										0.01
2	806	5.72	34.566	27.27										0.01
2	1011	4.63	34.565	27.39										0.02
														7.66

T G THOMPSON		CRUISE 026		STATION 058		OBSERVED VALUES	
CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L			
1	0		2.39	2.18			
1	10						
1	20						
1	30		2.42	2.37			
1	40						
1	50		2.43	2.45			
1	75		2.44	2.42			
1	100		2.42	2.44			
1	125		2.42	2.46			
1	150						
2	200		2.41	2.45			
2	252						
2	302		2.42	2.50			
2	352						
2	403						
2	452						
2	504		2.46	2.58			
2	554						
2	604						
2	706						
2	806						
2	1011		2.47	2.60			



[illegible]

T G THOMPSON CRUISE 026 STATION: 059 OBSERVED VALUES

CST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.40	2.21
1	10			
1	20			
1	30		2.39	2.30
1	40			
1	50		2.42	2.47
1	75		2.42	2.45
1	101		2.40	2.46
1	126			
1	151			
2	202		2.39	2.51
2	253			
2	304		2.42	2.53
2	354			
2	405			
2	456			
2	505		2.42	2.60
2	556			
2	605			
2	707			
2	807			
2	1009		2.47	2.57

DATE HOUR LAT LONG	19/02/68 1.7 08-52.0N 087-03.0W	T G THOMPSON				CRUISE 026				STATION 060				OBSERVED VALUES				WAVE PERIOD 2 SECCHI SOUNDING 3062			
		BARO TEMP TEMP DRY TEMP WET REL HUMID	1009.2 25.6 24.9 94	WEATHER VISIBILITY CLOUD TYPE CLOUD AMT	02 UGAT/L	02 UGAT/L	02 UGAT/L	AOU UGAT/L	0/0 02 SATN	P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L	PH							
CAST	DEPTH	TEMP DEG.C	SAL O/100	SIGMAT	02 UGAT/L	02 UGAT/L	AOU UGAT/L	0/0 02 SATN	P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L	PH								
1	0	25.04	34.391	22.89	401		13	97	0.93	7.31	8.78	0.17	8.23								
1	10	19.88	34.612	24.52	299		151	66	1.23	11.21	14.55	0.12									
1	20	15.30	34.906	25.85	201		288	41	1.66	19.37	22.25	0.06									
1	30	14.55	34.922	26.03	72		424	15	2.03		27.58	0.07	7.99								
1	40	14.18	34.933	26.12	58		443	12	2.15	20.10	28.82	0.13									
1	50	13.98	34.929	26.15	53		449	11	2.10	21.56	29.27	0.10	7.97								
1	75	13.67	34.924	26.22	64		442	13	2.14	21.68	29.30	0.03	7.98								
1	100	13.42	34.915	26.26	45	31.66	463	9	2.20	22.41	30.65	0.02	7.94								
1	125	13.15	34.903	26.31	40	31.24	471	8	2.26	23.02	30.95	0.02	7.92								
1	150	12.89	34.890	26.35	15	6.63	499	3	2.39	26.07	32.10	0.00									
2	202	12.43	34.853	26.41		29.75	489	6	2.36	27.04	31.36	0.03	7.91								
2	252	11.76	34.807	26.50		39.74	487	8	2.36	28.87	31.86	0.03									
2	303	11.08	34.771	26.60		14.11	521	3	2.56	31.79	33.51	0.02	7.84								
2	353	10.49	34.761	26.70		8.71	533	2	2.59	33.13	32.00	0.02									
2	404	9.59	34.689	26.80		2.55	550	0	2.95	43.00	31.25	0.01									
2	454					1.91					30.59	0.17									
2	504	8.06	34.622	26.99		1.44	572	0	3.25	56.88	32.28	0.76	7.76								
2	554					1.40					35.13	0.04									
2	604	6.89	34.592	27.13		3.82	586	1	3.27	64.55	34.49	0.01									
2	704	6.12	34.576	27.22		8.46	592	1	3.35	72.71	41.34	0.01									
2	803	5.42	34.573	27.31		30	596	5	3.40	81.97	42.78	0.00									
2	1004	4.45	34.574	27.42		65	546	11	3.42	95.98	42.60	0.01	7.78								
2	1203	3.77	34.588	27.50		86	551	13	3.32	108.16	42.65	0.00									

T. G. THOMPSON CRUISE 326 STATION 060 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		7.41	2.23
1	10			
1	20			
1	30		2.44	2.47
1	40			
1	50		2.42	2.48
1	75		2.44	2.49
1	100		2.43	2.50
1	125		2.41	2.51
1	150			
2	202		2.44	2.51
2	252			
2	303		2.44	2.54
2	353			
2	404			
2	454			
2	504		2.46	2.59
2	554			
2	604			
2	704			
2	803			
2	1004		2.51	2.66
2	1203			

19/02/68 10:08 08-44.0N 087-52.0W				T G THOMPSON CRUISE 026				STATION 061				OBSERVED VALUES				WAVE PERIOD 3 SECCHI SOUNDING 3200			
DATE TIME LAT LONG	CAST	DEPTH	TEMP DEG.C	BARO TEMP TEMP REL	DRY WET HUMID	1009.1 24.2 23.0	SIGMAT	WEATHER		O2 UGAT/L	O2 UGAT/L	AOU UGAT/L	O/O O2 SATN	P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L	PH	
								VISIBILITY	CLOUD										TYPE
	1	0	21.19	34.648	24.19	443	28.90			-2	101			1.12	13.52	13.38	0.11	8.16	
	1	10	16.43	34.832	25.54	104				375	22			1.96	17.42	23.41	0.38		
	1	20	14.68	34.872	25.96	25				470	5			2.41	21.92	29.07	0.14		
	1	30	14.19	34.918	26.10	71				429	14			2.22	20.95	29.75	0.08	7.89	
	1	40	13.95	34.932	26.16	44				459	9			2.22	20.71	29.82	0.06		
	1	50	13.76	34.922	26.20	52				453	10			2.17	21.19	29.19	0.06	7.90	
	1	75	13.46	34.915	26.25	34				474	7			2.26	22.65	30.10	0.03	7.87	
	1	100	13.29	34.912	26.28	43				467	8			2.26	22.78	30.22	0.03	7.88	
	1	125	13.08	34.899	26.32	38	27.62			473	7			2.29	23.87	29.69	0.06	7.87	
	1	150	12.88	34.888	26.35	40	28.86			474	8			2.33	23.63	30.22	0.03		
	2	201	12.44	34.859	26.41		15.34			504	3			2.45	26.43	31.23	0.03	7.84	
	2	251	11.80	34.917	26.50		19.21			507	4			2.43	28.38	31.62	0.02		
	2	301	11.20	34.778	26.59		13.73			519	3			2.54	32.03	32.46	0.02	7.81	
	2	352	10.40	34.736	26.70		9.18			534	2			2.71	35.32	30.25	0.00		
	2	402	9.65	34.698	26.79		1.06			551	0			2.90	41.78	28.56	0.01		
	2	452					0.25									31.32	0.15		
	2	502	7.89	34.633	27.02		4.84			570	1			3.17	56.39	36.34	0.01	7.73	
	2	553					1.15									35.90	0.03		
	2	603	6.88	34.608	27.15		9.82			580	2			3.24	64.43	39.20	0.00		
	2	704	6.22	34.585	27.22		22.35			577	4			3.24	71.01	40.76	0.00		
	2	804	5.59	34.573	27.29	33	21.63			576	5			3.34	80.14	42.65	0.00		
	2	1003	4.49	34.579	27.42	58	44.54			568	9			3.42	100.61	42.85	0.01	7.72	
	2	1204	3.80	34.593	27.51	91				545	14			3.32	110.59	42.27	0.00		

T G THOMPSON CRUISE 026 STATION 061 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0	1.66	2.44	2.14
1	10	0.48		
1	20	0.37		
1	30	0.85	2.44	2.27
1	40	0.58		
1	50		2.43	2.29
1	75	0.13	2.44	2.29
1	100	0.02	2.43	2.29
1	125	0.18	2.44	2.30
1	150	0.02		
2	201	0.79	2.44	2.29
2	251	0.41		
2	301	0.20	2.44	2.31
2	352	0.43		
2	402	0.45		
2	452	0.09		
2	502	0.90	2.46	2.37
2	553	0.35		
2	603	0.41		
2	704			
2	804			
2	1003		2.48	2.40
2	1204	0.45		

T G THOMPSON CRUISE 026 STATION 062 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.42	2.11
1	10			
1	20			
1	30		2.44	2.27
1	40			
1	50		2.43	2.29
1	76		2.43	2.27
1	101		2.43	2.30
1	126		2.44	2.31
1	151			
2	200		2.43	2.31
2	251			
2	300		2.43	2.33
2	351			
2	401			
2	451			
2	501		2.45	2.37
2	550			
2	599			
2	705			
2	805			
2	1005		2.49	2.42
2	1204			

T G THOMPSON CRUISE 026				STATION 063				OBSERVED VALUES				WAVE PERIOD 2 SECCHI 15 SOUNDING 3338			
DATE 19/02/68 TIME 09-00-00 LAT 088-24.2W LONG	BARO TEMP TEMP REL HUMID	1009.2 25.8 23.9 85	SIGMAT	02 UGAT/L	02 UGAT/L	0/0 02 SATN	ACU UGAT/L	0/0 02 SATN	P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L	PH		
CAST	DEPTH	TEMP DEG.C	SAL 0/00												
1	0	23.41	34.626	23.55	493		-68	116	1.17	11.33	13.36	0.21	8.14		
1	10	22.19	34.612	23.89	440		-6	102	1.21	9.99	13.78	0.13			
1	20	19.27	34.594	24.66	324		131	71	1.94	13.89	20.43	0.84			
1	30	15.76	34.847	25.70	100		385	21	2.29	19.73	29.08	0.21	7.86		
1	40	14.60	34.875	25.98	46		450	9	2.38	21.80	28.40	1.36			
1	50	14.05	34.878	26.10	25		477	5	2.38	22.41	30.29	0.26	7.85		
1	76	13.57	34.908	26.22	27		480	5	2.20	21.31	28.70	0.04	7.91		
1	101	13.37	34.911	26.27	53	29.07	455	10	2.29	22.17	30.18	0.03	7.88		
1	126	13.08	34.898	26.32	39	28.47	473	8	2.31	23.63	31.50	0.02	7.88		
1	150	12.90	34.889	26.35	45	22.95	468	9	2.47	23.63	31.29	0.02			
2	200	12.57	34.864	26.39		16.83	501	3	2.39	25.46	31.49	0.03	7.84		
2	250	12.11	34.833	26.46		9.26	513	2	2.48	27.77	32.67	0.02			
2	300	12.54	34.797	26.35		8.16	510	2	2.55	30.21	32.55	0.02	7.80		
2	351	10.79	34.760	26.65		6.25	532	1	2.68	33.25	33.19	0.01			
2	401	10.00	34.714	26.75		2.59	545	0	2.85	39.34	30.65	0.02			
2	451					2.25					28.71	1.01			
2	500	8.14	34.628	26.98		0.89	571	0	3.19	55.18	32.16	0.62	7.72		
2	550					2.74					35.69	0.03			
2	600	7.12	34.593	27.12		2.72	585	0	3.25	62.24	42.09	0.01			
2	700	6.12	34.573	27.22		9.22	591	2	3.35	71.13	41.71	0.02			
2	800	5.54	34.569	27.29		14.66	581	5	3.39	78.80	43.31	0.01			
2	900	4.60	34.567	27.41	28	39.10	550	12	3.44	93.54	43.06	0.01	7.74		
2	1200	3.75	34.590	27.51	84		553	13	3.20	106.94	42.73	0.00			



T G THOMPSON CRUISE 026				STATION 062				OBSERVED VALUES							
DATE	19/02/68	BARO	1011.6	WEATHER	X1	WIND VELOC	11	WAVE PERIOD	2	WAVE SECCHI	16	WAVE PERIOD	2	WAVE SECCHI	16
TIME	08-34.00N	TEMP	25.9	VISIBILITY	4	WIND DIREC	03	WAVE DIR	03	WAVE DIR	03	WAVE DIR	03	WAVE DIR	03
LONG	088-26.00W	REL HUMID	23.9	CLOUD TYPE	6	WAVE HEIGHT	02	WAVE HEIGHT	02	WAVE HEIGHT	02	WAVE HEIGHT	02	WAVE HEIGHT	02
CST	DEPTH	TEMP	SAL	SIGMAT	O2	UGAT/L	O2	UGAT/L	O2	UGAT/L	O2	UGAT/L	O2	UGAT/L	PH
1	0	23.30	34.560	23.53	472	472	472	472	472	472	472	472	472	472	8.20
1	10	21.45	34.510	24.02	462	462	462	462	462	462	462	462	462	462	8.20
1	20	20.33	34.589	24.38	183	183	183	183	183	183	183	183	183	183	8.20
1	30	14.84	34.922	25.97	21	21	21	21	21	21	21	21	21	21	8.20
1	40	14.21	34.930	26.11	10	10	10	10	10	10	10	10	10	10	8.20
1	50	13.86	34.942	26.19	14	14	14	14	14	14	14	14	14	14	8.20
1	76	13.57	34.922	26.24	66	66	66	66	66	66	66	66	66	66	8.20
1	101	13.39	34.928	26.28	36	36	36	43.09*	472	472	472	472	472	472	8.20
1	126	13.17	34.907	26.30	34	34	34	26.52	477	477	477	477	477	477	8.20
1	151	12.98	34.889	26.33	31	31	31	30.39	482	482	482	482	482	482	8.20
2	200	12.58	34.881	26.40				29.66	488	488	488	488	488	488	8.20
2	251	11.97	34.828	26.48				21.89	502	502	502	502	502	502	8.20
2	300	11.27	34.783	26.58				9.73	523	523	523	523	523	523	8.20
2	351	10.64	34.747	26.66				12.66*	527	527	527	527	527	527	8.20
2	401	9.94	34.712	26.76				1.17	547	547	547	547	547	547	8.20
2	451							0.34							8.20
2	501	8.21	34.650	26.99				0.98	570	570	570	570	570	570	8.20
2	550							1.32							8.20
2	599	7.06	34.598	27.11				2.29	585	585	585	585	585	585	8.20
2	705	6.18	34.579	27.22				9.39	590	590	590	590	590	590	8.20
2	805	5.48	34.571	27.30				19.76	594	594	594	594	594	594	8.20
2	1005	4.46	34.581	27.43				48.83	576	576	576	576	576	576	8.20
2	1204	3.76	34.594	27.51				92	545	545	545	545	545	545	8.20

T G THOMPSON, CRUISE 026 STATION: 063 OBSERVED VALUES

CASE	DEPTH	CH3 URAT/L	ALP MFG/L	CO2 MMOL/L
1	0	0.96	2.41	2.10
1	10	1.59		
1	20	1.79		
1	30	0.94	2.41	2.27
1	40	0.54		
1	50	0.27	2.41	2.30
1	76	0.38	2.42	2.30
1	101	0.41	2.41	2.30
1	126	0.04	2.40	2.28
1	150	0.60		
2	200	0.78	2.42	2.27
2	250	0.81		
2	300	0.62	2.42	2.31
2	351	0.37		
2	401	1.87		
2	451	0.01		
2	500	0.05	2.44	2.37
2	550	0.08		
2	600	0.73		
2	700			
2	800			
2	900		2.47	2.42
2	1200			

T G THOMPSON CRUISE 026				STATION 064				OBSERVED VALUES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
DATE 20/02/68		BARO 1012.2		WEATHER		WIND VELOC		WAVE PERIOD		NO2		NO3		SI04		PO4		O/O		O2		AOU		O2		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2		AOU		O2	

T G THOMPSON CRUISE 026 STATION 064 OBSERVED VALUES

CST	DEPTH	NH3 MICAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.39	1.99
1	10			
1	20			
1	29		2.41	2.17
1	39			
1	49		2.43	2.23
1	74		2.44	2.30
1	99		2.44	2.31
1	123		2.44	2.34
1	146			
2	198		2.44	2.35
2	549			
2	298		2.44	2.34
2	347			
2	397			
2	448			
2	498		2.45	2.44
2	542			
2	598			
2	699			
2	799			
2	996		2.51	2.41
2	1198			

DATE TIME LAT LONG	20/62/68 10.5 08-54.0N 088-56.0W	T G THOMPSON				CRUISE 026				STATION 065				OBSERVED VALUES				WAVE PERIOD 2 SECCHI SOUNDING 3338						
		BARO TEMP WET REL HUMID	1010.1 24.3 23.5 93	SIGMAT	O2 UGAT/L	WEATHER VISIBILITY CLOUD TYPE CLOUD AMT	O2 UGAT/L	ACU UGAT/L	WIND VELOC WIND DIREC WAVE DIREC WAVE HEIGHT	O/D O2 SATN	P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L	PH									
CAST	DEPTH	TEMP DEG.C	SAL 0/00																					
1	0	23.56	34.544	23.45	511							-87	121			0.76	0.37	8.19	0.30					8.19
1	10	22.95	34.554	23.63	508							-79	119			0.91	0.61	10.78	0.23					
1	20	19.71	34.619	24.57	273							179	60			1.55	12.42	17.74	0.54					
1	30	15.60	34.901	25.78	90							396	19			1.94	18.27	25.27	0.28					7.90
1	40	14.60	34.918	26.01	99							398	20			1.92	19.12	26.21	0.39					
1	50	14.17	34.918	26.11	57							443	11			2.08	20.58	28.51	0.19					7.88
1	75	13.70	34.922	26.21	55							450	11			2.15		29.66	0.09					
1	101	13.40	34.916	26.27	54				43.14			455	11			2.14	22.29	29.90	0.06					7.87
1	126	13.15	34.902	26.30	51				38.38			460	10			2.21	25.58	30.53	0.06					7.83
1	151	12.99	34.894	26.33	38				25.92			475	7			2.25	24.24	30.76	0.08					
2	199	12.59	34.869	26.39					22.44			495	4			2.31	25.58	30.48	0.07					7.75
2	249	11.93	34.826	26.49					21.25			503	4			2.40	28.50	31.68	0.05					
2	299	11.25	34.783	26.58					14.24			518	3			2.45	31.06	33.30	0.02					7.74
2	347	10.40	34.734	26.70					4.25			539	1			2.71	37.03	32.88	0.02					
2	399	9.72	34.696	26.77					1.23			550	0			3.06	42.39	30.10	0.03					
2	449								0.89									29.08	1.10					
2	498	8.06	34.628	26.99					1.83			571	0			3.27	56.64	34.03	0.05					7.72
2	547								2.12									36.03	0.02					
2	597	6.99	34.590	27.12					2.85			585	0			3.22	65.41	37.79	0.03					
2	697	6.17	34.572	27.21					8.24			592	1			3.31	72.59	41.73	0.00					
2	797	5.48	34.565	27.29				16	9.82			594	3			3.36	82.70	43.40	0.01					
2	997	4.46	34.569	27.42				57	45.56			563	9			3.35	98.17	43.31	0.01					7.67
2	1200	3.75	34.590	27.51				94				543	15			3.26	111.57	42.23	0.04					

Y G THOMPSON CRUISE 726 STATION 065 OBSERVED VALUES

CST	DEPTH	HM3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0	0.83	2.44	2.08
1	10	1.49		
1	20	1.60		
1	30	1.22	2.44	2.25
1	40	1.06		
1	50	0.57	2.45	2.26
1	75	0.26	2.45	2.29
1	101	0.28	2.45	2.31
1	125	0.13	2.45	2.32
1	151	0.60		
2	199	0.51	2.45	2.32
2	249	0.21		
2	299	0.21	2.45	2.33
2	347	0.51		
2	399	0.10		
2	448	0.06		
2	493	0.30	2.48	2.39
2	547	0.02		
2	597	0.45		
2	697			
2	797			
2	997		2.51	2.43
2	1200			

T G THOMPSON CRUISE 026				STATION 066				OBSERVED VALUES					
DATE	20/02/69	BARO	1012.4	WEATHER	X1	WIND VELOC	03	WAVE PERIOD	2				
HOUR	18.0	TEMP DRY	28.6	VISIBILITY	8	WIND DIREC	31	SECCHI	13				
LAT	08-53.0 N	TEMP WET	25.2	CLOUD TYPE	0	WAVE DIREC	01	SOUNDING	3338				
LONG	089-27.0 W	REL HUMID	76	CLOUD AMT	2	WAVE HEIGHT	01						
CST	DEPTH	TEMP DEG.C	SAL 0/00	SIGMAT	O2 UGAT/L	O2 UGAT/L	O/O O2 SATM	AOU UGAT/L	PO4 UGAT/L	SI04 UGAT/L	NO3 UGAT/L	NO2 UGAT/L	PH
1	0	24.29	34.328	23.07	542		129	-122	0.39	0.61	0.62	0.18	8.31
1	10	23.55	34.323	23.28	540		127	-115	0.49	1.22	0.99	0.15	
1	20	17.70	34.733	25.16	69		15	399	2.03	16.56	24.29	0.72	
1	30	15.02	34.904	25.91	148		30	344	1.92	18.27	25.28	0.23	7.89
1	40	14.54	34.912	26.02	83		17	414	1.97	19.00	26.39	0.64	
1	50	14.06	34.909	26.12	63		13	438	2.11	20.71	29.07	0.14	7.89
1	76	13.69	34.921	26.21	41		8	465	2.18	21.31	29.92	0.04	7.86
1	101	13.40	34.913	26.26	34	18.87	7	474	2.26	22.41	30.69	0.03	
1	126	13.15	34.902	26.31	56	43.52	11	455	2.18	22.53	30.11	0.02	7.67
1	150	12.93	34.889	26.34	53	41.86	10	461	2.21	23.02	30.32	0.02	
2	197	12.48	34.861	26.41		15.85	3	503	2.33	26.19	31.80	0.05	7.82
2	548	11.77	34.810	26.51		19.89	4	507	2.38	28.01	32.43	0.05	
2	297	11.09	34.772	26.60		9.90	2	525	2.50	31.55	33.28	0.04	7.79
2	346	10.59	34.744	26.67		5.31	1	535	2.64	34.96	33.38	0.03	
2	395	9.78	34.698	26.77		1.15	0	549	2.82	41.17	31.25	0.06	
2	445					1.27					29.74	1.15	
2	494	8.20	34.627	26.97		0.38	0	571	3.14	62.61	31.31	0.93	7.71
2	544					1.70					35.28	0.14	
2	593	7.01	34.594	27.12		1.15	0	586	3.18	61.87	39.33	0.04	
2	692	6.22	34.571	27.21		6.54	1	593	3.28	69.91	41.28	0.03	
2	792	5.59	34.565	27.28	22	15.51	4	586	3.36	77.83	43.38	0.03	
2	994	4.53	34.569	27.41	53	42.54	8	572	3.34	93.54	43.59	0.03	7.71
2	1194	3.91	34.584	27.49	94		15	541	3.33	104.63	42.59	0.02	

T G THOMPSON CRUISE 026 STATION: 066 OBSERVED VALUES

CST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.43	2.00
1	10			
1	20			
1	30		2.45	2.26
1	40			
1	50		2.44	2.28
1	76		2.44	2.26
1	101		2.44	2.20
1	126		2.45	2.29
1	150			
2	197		2.45	2.30
2	548			
2	297		2.46	2.33
2	346			
2	395			
2	445			
2	494		2.47	2.38
2	544			
2	593			
2	692			
2	792			
2	994		2.51	2.43
2	1194			



DATE 21/02/68 07 08-52.0N 090-13.0W			T G THOMPSON CRUISE 026				STATION 067				OBSERVED VALUES				WAVE PERIOD X SOUNDING 3347			
CAST	DEPTH	TEMP DEG.C	SAL O/00	SIGMAT	WEATHER		VISIBILITY CLOUD TYPE CLOUD AMT	O2 UGAT/L	O2 UGAT/L	AOU UGAT/L	O/O O2 SATN	P04 UGAT/L	S104 UGAT/L	N03 UGAT/L	N02 UGAT/L	PH		
					BARO TEMP TEMP REL HUMID	1010.0 26.0 24.1 85												
1	0	25.10	34.358	22.85	596					-182	144	0.20	0.97	0.84	0.09	8.32		
1	10	23.42	34.321	23.32	534					-108	126	0.54	1.22	3.26	0.10			
1	20	21.73	34.415	23.87	383					54	88	1.26	10.96	12.58	0.15			
1	30	19.60	34.593	24.58	219					233	48	1.78	12.55	19.78	0.65	7.97		
1	40	15.61	34.895	25.77	116					371	24	2.00	17.42	25.01	0.12			
1	50	14.59	34.911	26.01	42					455	8	2.18	22.53	29.04	0.84	7.83		
1	74	13.92	34.913	26.15	40					463	8	2.23	22.17	30.54	0.05	7.80		
1	99	13.60	34.914	26.22	36			26.99		471	7	2.27	22.29	30.83	0.01	7.88		
1	124	13.28	34.893	26.27	38			21.55		472	7	2.32	23.26	31.72	0.01	7.76		
1	149	12.95	34.885	26.33	32			20.70		482	6	2.36	24.12	32.17	0.02			
2	198	12.47	34.841	26.39				15.26		503	3	2.38	25.58	31.66	0.07	7.85		
2	247	11.82	34.814	26.50				5.99		520	1	2.59	29.11	33.34	0.02			
2	299	11.06	34.765	26.60				5.23		530	1	2.60	32.52	33.65	0.01	7.78		
2	345	10.36	34.730	26.70				4.63		539	1	2.71	35.93	33.52	0.01			
2	396	9.84	34.705	26.77				2.68		547	0	2.87	39.95	33.44	0.01			
2	445							0.47										
2	495	8.20	34.626	26.97				0.98		570	0	3.19	53.71	29.52	1.21	7.72		
2	545							0.68						35.35	0.29			
2	595	7.03	34.590	27.11				1.10		586	0	3.33	61.75	40.32	0.02			
2	695	6.38	34.573	27.19				5.82		591	1	3.33	67.84	42.27	0.00			
2	795	5.69	34.573	27.28	35			10.92		572	6	3.39	76.00	44.84	0.00			
2	997	4.67	34.570	27.39	60			40.80		562	10	3.48	89.52	44.16	0.00	7.74		
2	1199	3.96	34.583	27.48	96					538	15	3.44	102.92	44.42	0.00			

T G THOMPSON CRUISE 026 STATION 067 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.44	1.98
1	10			
1	20			
1	30		2.43	2.21
1	40			
1	50		2.44	2.28
1	74		2.44	2.31
1	99		2.45	2.29
1	124			2.31
1	149			
2	198		2.45	2.32
2	247			
2	299		2.46	2.34
2	345			
2	396			
2	445			
2	495		2.48	2.39
2	545			
2	595			
2	695			
2	795			
2	997		2.50	2.43
2	1199			

T G THOMPSON CRUISE 026				STATION 069				OBSERVED VALUES					
DATE 22/02/69		BARO 1008.8		WEATHER		WIND VELOC 13		WAVE PERIOD 2					
HOUR 09-50.0N		TEMP DRY 26.4		VISIBILITY 8		WIND DIREC 34		SECCHI					
LAT 088-27.0W		TEMP WET 23.5		CLOUD TYPE 9		WAVE DIREC 34		SOUNDING 3292					
LONG 088-27.0W		REL HUMID 78		CLOUD AMT 9		WAVE HEIGHT 1							
CAST	DEPTH	TEMP DEG.C	SAL O/00	SIGMAT	O2 UGAT/L	O2 UGAT/L	AOU UGAT/L	O/O O2 SATN	P04 UGAT/L	SIO4 UGAT/L	NO3 UGAT/L	NO2 UGAT/L	PH
1	0	25.93	33.876	22.23	465		-55	114	0.27	1.34	0.20	0.05	8.33
1	10	25.80	33.868	22.26	468		-57	114	0.27	1.58	0.19	0.02	
1	20	25.30	33.846	22.40	437		-22	106	0.40	1.71	0.46	0.21	
1	30	24.23	34.286	23.06	363		56	87	1.05	4.38	9.43	1.38	6.17
1	40	18.11	34.704	25.04	103		361	22	2.06	16.08	22.97	0.78	
1	50	16.72	34.700	25.37	113		364	24	2.07	17.17	22.02	0.76	7.95
1	75	13.53	34.880	26.21	13		494	3	2.38	23.26	30.87	0.06	7.87
1	100	13.21	34.980	26.28	11	5.31	499	2	2.39	24.73	30.95	0.02	7.82
1	125	12.96	34.874	26.32	19	6.84	495	4	2.39	24.97	31.88	0.01	7.86
1	150	12.69	34.865	26.37	25	10.96	492	5	2.40	25.70	31.86	0.03	
2	197	12.21	34.826	26.43		17.17	504	3	2.40	27.53	31.57	0.07	7.86
2	248	11.69	34.795	26.51		3.44	524	1	2.54	30.33	31.58	0.02	
2	298	11.05	34.760	26.60		1.23	534	0	2.65	33.37	31.57	0.03	
2	347	10.37	34.725	26.69		0.76	542	0	2.79	38.85	29.56	0.15	
2	398	9.49	34.677	26.81		1.19	553	0	3.08	45.92	27.19	1.06	
2	447					1.83					26.80	1.49	
2	497	7.99	34.611	26.99		1.27	573	0	3.20	58.95	29.91	1.24	7.74
2	547					0.34					33.75	0.29	
2	596	6.91	34.590	27.13		1.78	587	0	3.30	66.50	37.14	0.01	
2	696	6.16	34.573	27.22		8.07	592	1	3.34	73.69	40.19	0.02	
2	797	5.57	34.567	27.29	25	13.73	584	4	3.45	80.63	41.24	0.02	
2	996	4.66	34.564	27.39	48	24.86	574	8	3.48	95.86	43.07	0.00	7.74
2	1197	3.83	34.589	27.50	70		565	11	3.39	111.57	42.99	0.00	

T G THOMPSON CRUISE 026 STATION 069 OBSERVED VALUES

CST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
1	0		2.39	1.98
1	10			
1	20			
1	30		2.43	2.07
1	40			
1	50		2.45	2.23
1	75		2.44	2.27
1	100		2.46	2.28
1	125		2.44	2.27
1	150			
2	197		2.46	2.30
2	248			
2	298			2.31
2	347			
2	398			
2	447			
2	497		2.48	2.36
2	547			
2	596			
2	696			
2	797			
2	996		2.52	2.40
2	1197			

T G THOMPSON CRUISE 026				STATION 070				OBSERVED VALUES				WAVE PERIOD 3 SECCHI 09 SOUNDING 4590			
DATE	TIME	LONG	LAT	BARO	TEMP	REL	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND
22/02/68	16.8	101.4	27.3	1011.4	27.3	24.0	1011.4	27.3	24.0	1011.4	27.3	24.0	1011.4	27.3	24.0
10-59.00N	087-24.00W	101.4	27.3	1011.4	27.3	24.0	1011.4	27.3	24.0	1011.4	27.3	24.0	1011.4	27.3	24.0
CAST	DEPTH	TEMP	SAL	SIGMAT	02	02	02	02	02	02	02	02	02	02	02
		DEG.C	0/00		UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L	UGAT/L
1	0	26.08	33.829	22.15	537	50	131	444	483	502	509	562	572	580	586
1	50	14.79	34.899	25.96	25	16	43	0.81	0.85	1.61	1.57	2.55	5.40	27.44	27.44
1	100	13.49	34.904	26.24	25	16	43	0.81	0.85	1.61	1.57	2.55	5.40	27.44	27.44
1	200	12.51	34.857	26.40	16	43	0.81	0.85	1.61	1.57	2.55	5.40	27.44	27.44	27.44
1	372	9.61	34.694	26.80	43	0.81	0.85	1.61	1.57	2.55	5.40	27.44	27.44	27.44	27.44
1	424	8.80	34.652	26.90	43	0.81	0.85	1.61	1.57	2.55	5.40	27.44	27.44	27.44	27.44
1	472	8.01	34.630	27.00	43	0.81	0.85	1.61	1.57	2.55	5.40	27.44	27.44	27.44	27.44
1	523	7.43	34.609	27.07	43	0.81	0.85	1.61	1.57	2.55	5.40	27.44	27.44	27.44	27.44
1	574	6.94	34.590	27.13	43	0.81	0.85	1.61	1.57	2.55	5.40	27.44	27.44	27.44	27.44
1	623	6.57	34.586	27.17	43	0.81	0.85	1.61	1.57	2.55	5.40	27.44	27.44	27.44	27.44
1	1025	4.34	34.578	27.44	43	0.81	0.85	1.61	1.57	2.55	5.40	27.44	27.44	27.44	27.44

T G THOMPSON CRUISE 026				STATION 071				OBSERVED VALUES			
DATE	22/02/68	BARO	1007.8	WEATHER	X0	#IND VELOC	03	#IND DIREC	32	WAVE PERIOD	3
TIME	12:01	TEMP DRY	26.8	VISIBILITY	8	#IND DIREC	32	WAVE PERIOD	06	SECCM	06
LAT	14-15.00N	TEMP WET	23.1	CLOUD TYPE	0	WAVE HEIGHT	32	WAVE PERIOD	1033	SOUNDING	1033
LONG	087-08.00W	REL HUMID	73	CLOUD AMT	0						
CST	DEPTH	TEMP	SAL	SIGMAT	O2	UGAT/L	O2	UGAT/L	O2	UGAT/L	PH
		DEG.C	O/100		UGAT/L		UGAT/L		UGAT/L		
1	0	26.84	34.034	22.06	545	-141	135	0.13	2.39	0.01	
1	25	20.90	34.509	24.17	199	244	45	1.66	17.66	1.86	
1	49	15.18	34.974	25.85	43	448	5	2.22	31.83	0.11	
1	99	13.35	34.888	26.25	24	485	5	2.31	32.18	0.01	
1	198	12.26	34.841	26.43	18	503	3	2.39	32.55	0.02	
1	299	11.21	34.772	26.58		531	0	2.60	32.78	0.00	
1	348	10.42	34.731	26.69		542	0	2.74	30.41	0.05	
1	398	9.56	34.687	26.80		553	0	2.84	29.00	0.80	
1	448	8.78	34.647	26.90		563	0	3.02	28.23	1.28	
1	497	8.15	34.638	26.99		565	1	3.06	33.73	0.05	
1	551	7.51	34.605	27.06		578	1	3.17	35.93	0.00	

DATE 23/02/68		T G THOMPSON		CRUISE 026		STATION 072		OBSERVED VALUES		WAVE PERIOD 3		SECCHI SOUNGING 305	
HOUR 062		BARO 1008.5		WEATHER x1		WIND VELOC 12		WIND DIREC 30		WAVE PERIOD 3		SECCHI SOUNGING 305	
LAT 11-20.0N		TEMP DRY 26.8		VISIBILITY 8		WAVE DIREC 30		WAVE HEIGHT 2		WAVE PERIOD 3		SECCHI SOUNGING 305	
LONG 087-05.0W		REL HUMID 72		CLOUD AMT 1		WAVE PERIOD 3		WAVE HEIGHT 2		WAVE PERIOD 3		SECCHI SOUNGING 305	
CST	DEPTH	TEMP DEG.C	SAL O/100	SIGMAT	O2 UGAT/L	O2 UGAT/L	AOU UGAT/L	O/O O2 SATN	PO4 UGAT/L	NO3 UGAT/L	NO2 UGAT/L	PH	
1	0	26.77	33.982	22.05	518		-114	128	0.14	0.80	0.00		
1	25	21.71	34.313	23.80	254		183	58	1.35	10.94	0.60		
1	50	14.67	34.863	25.96	8		488	2	2.39	28.95	0.04		
1	74	13.80	34.881	26.16	4		500	1	2.47	26.92	0.23		
1	99	13.20	34.876	26.28	10		501	2	2.50	26.08	0.52		
1	150	12.74	34.862	26.36		4.08	512	1	2.46	30.35	0.03		
1	200	12.39	34.842	26.41		2.42	517	0	2.52	30.46	0.00		
1	224	12.12	34.827	26.45		4.50	518	1	2.51	31.64	0.00		
1	250	11.97	34.815	26.47		2.93	521	1	2.58	31.48	0.04		
1	274	11.66	34.800	26.52		2.42	525	0	2.58	31.69	0.04		
1	305	11.20	34.776	26.58		2.51	531	0	2.63	30.76	0.08		

DATE		23/02/68		T G THOMPSON CRUISE 026				STATION 073				OBSERVED VALUES				AVE PERIOD				PM
HOUR		16.3		BARO		1013.2		WEATHER		X1		WIND VELOC		15		2		SOUNDING	585	
LAT		12-23.0N		TEMP DRY		28.0		VISIBILITY		TYPE		WIND DIREC		35		13				
LONG		088-48.0W		TEMP WET		22.5		CLOUD AMT		8		WAVE DIREC		3		585				
				REL HUMID		62				1		WAVE HEIGHT		3						
CAST	DEPTH	TEMP DEG.C	SAL O/00	SIGMAT	O2 UGAT/L	O2 UGAT/L	AOU UGAT/L	O/C	O2 SATN	PO4 UGAT/L	NO3 UGAT/L	NO2 UGAT/L								
1	0	25.98	34.257	22.50	475		-66	117		0.28	2.42	0.06								
1	25	22.04	34.319	23.71	243		192	56		1.24	13.93	0.78								
1	49	18.76	34.683	24.86	170		289	37		1.88	21.99	0.58								
1	93	13.22	34.862	26.26	19		492	4		2.41	32.81	0.01								
1	149	12.50	34.852	26.40	17	7.61	501	3		2.41	31.64	0.00								
1	199	11.77	34.804	26.50	15	2.00	511	3		2.54	32.06	0.17								
1	249	11.71	34.796	26.50		3.06	524	1		2.56	32.30	0.10								
1	299	11.67	34.791	26.51		2.63	525	0		2.57	32.41	0.07								
1	349	10.27	34.728	26.71		0.47	544	0		2.81	30.10	0.20								
1	399	9.21	34.664	26.84		1.40	556	0		2.96	27.41	1.22								
1	449	8.78	34.650	26.90		1.87	562	0		3.06	28.31	1.24								
1	500	8.15	34.623	26.98		2.46	569	0		3.13	30.50	0.94								



T G THOMPSON CRUISE 026				STATION 074				OBSERVED VALUES				
DATE	24/02/68	BARO	1012.9	WEATHER	X0	WIND VELOC	04	WAVE PERIOD	2	PH		
HOUR	13.7	TEMP DRY	26.3	VISIBILITY	8	WIND DIREC	28	SECCHI	25			
LAT	13-01.0N	TEMP WET	19.8	CLOUD TYPE	X	WAVE DIREC	28	SOUNDING	5522			
LONG	091-47.0W	REL HUMID	54	CLOUD AMT	C	WAVE HEIGHT	1					
CAST	DEPTH	TEMP DEG.C	SAL 0/00	SIGMAT	O2 UGAT/L	O2 UGAT/L	AOU UGAT/L	O/O O2 SATN	P04 UGAT/L	SIO4 UGAT/L	NO3 UGAT/L	NO2 UGAT/L
1	0	26.56	34.344	22.38	451		-47	112	0.51		3.56	0.10
1	25	24.61	34.468	23.08	499		-82	120	0.80		8.26	0.15
1	50	15.92	34.789	25.62	19		465	4	2.38		29.45	0.30
1	100	13.53	34.884	26.21	14	2.21	493	3	2.41		31.24	0.02
1	201	12.38	34.853	26.42		13.60	506	3	2.43		31.98	0.00
1	302	11.20	34.767	26.58		5.95	527	1	2.59		32.48	0.00
1	353	10.35	34.720	26.69		0.55	543	0	2.81		28.49	0.47
1	403	9.50	34.671	26.80		0.59	554	0	2.97		27.05	1.28
1	453	8.61	34.636	26.91		0.59	565	0	3.10		27.16	1.30
1	505	7.99	34.605	26.99		1.15	573	0	3.17		29.32	1.16
1	555	7.35	34.587	27.07		0.72	582	0	3.26		32.06	1.06
1	605	6.88	34.580	27.13		1.57	588	0	3.34		35.76	0.30



T G THOMPSON CRUISE 026				STATION 076				OBSERVED VALUES				WAVE PERIOD 7			
DATE	02/03/68	BARO	1014.0	WEATHER	X1	WIND VELOC	04	WIND DIREC	33	WAVE DIREC	27	SECCHI	2425	NO2	PH
HOUR	14.00	TEMP DRY	25.3	VISIBILITY	9	WAVE HEIGHT	2	WAVE HEIGHT	2	WAVE HEIGHT	2	NO3	UGAT/L	UGAT/L	UGAT/L
LAT	17-24.0N	TEMP WET	21.6	CLOUD TYPE	3	WAVE HEIGHT	2	WAVE HEIGHT	2	WAVE HEIGHT	2	NO3	UGAT/L	UGAT/L	UGAT/L
LONG	102-22.0W	REL HUMID		CLOUD AMT		WAVE HEIGHT	2	WAVE HEIGHT	2	WAVE HEIGHT	2	NO3	UGAT/L	UGAT/L	UGAT/L
CASE	DEPTH	TEMP	SAL	SIGMAT	O2	O2	O2	AGU	O/O	O2	O2	PO4	UGAT/L	UGAT/L	UGAT/L
1	249	11.53	34.785	26.53	20	1.83	1.83	510	4	4	4	2.58	26.49	1.64	1.64
1	298	10.89	34.746	26.62	18	1.19	1.19	519	3	3	3	2.76	25.50	1.62	1.62
1	349	10.28	34.709	26.70		1.74	1.74	543	0	0	0	2.90	25.50	1.15	1.15
1	399	9.26	34.648	26.82		1.66	1.66	556	0	0	0	3.03	27.03	0.75	0.75
1	442	8.58	34.619	26.91		1.61	1.61	565	0	0	0	3.17	28.94	0.73	0.73
1	499	7.88	34.603	27.00		1.78	1.78	574	0	0	0	3.24	31.47	0.60	0.60
1	549	7.30	34.570	27.06		3.19	3.19	580	1	1	1	3.29	33.69	0.39	0.39
1	599	6.77	34.551	27.12		1.70	1.70	590	0	0	0	3.33	36.39	0.00	0.00



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T G THOMPSON CRUISE 026 STATION 078 OBSERVED VALUES

CAST	DEPTH	NH3 UGAT/L	ALK MEG/L	CO2 MMOL/L
2	0		2.45	2.06
2	49		2.44	2.26
2	98		2.44	2.30
2	298		2.46	2.34
2	348			
2	398		2.48	2.34
2	447			
2	503		2.48	2.39
2	550		2.48	
1	989		2.52	2.48
1	1982		2.57	2.43
1	2984		2.57	2.43
1	3990		2.56	2.46
1	4700		2.57	2.43

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PRODUCTIVITY DATA

REPRODUCED FROM BLANK

NOTE FOR PRODUCTIVITY DATA REPORT

(THOMPSON CRUISE 26)

Final Edit - January 1971

*Nitrogen*

The nitrogen uptake experiments were incubated 24 hours under natural light at simulated *in situ* intensities. The uptake rates given here represent *in situ* rates, which in most cases have been calculated from artificially stimulated uptake rates (MacIsaac and Dugdale, 1969; Dugdale and MacIsaac, 1971). The rates given here for all but the 1% light-penetration depth have been so calculated at all stations except Sta.36, and for nitrate uptake only at Stas. 24, 28, 32, and 34.

*Carbon*

The  $^{14}\text{C}$  productivity measurements given are light bottle values minus a constant dark bottle value. Samples were incubated for 24 hrs under natural light at simulated *in situ* intensities. In situations where no 1% measurement was made, zeros designated by asterisks have been entered in the report for integration purposes.

*Chlorophyll-a*

Chlorophyll values here are calculated according to Lorenzen (1967).

*Incident Radiation*

Incident radiation was measured with an Eppley pyranometer. A value marked with an asterisk is a daily value based on data from only half a day.



### *Chemistry*

Fresh samples were used for all determinations. Nitrate analyses were made in duplicate, using the method of Wood *et al.* (1967); and ammonium analyses were done in triplicate according to the procedure of Procházková (1964).

### *Comments*

The right-hand half of the first line of each station report is reserved for descriptive comments about the station or work there. Frequently the space is blank, but occasionally the entry NO<sub>3</sub> UPTAKE SUPPRESSION occurs. Such stations showed a suppression of nitrate uptake below expected rates, possibly due to the presence of high ammonium concentrations.

### *References*

- Dugdale, R. C., and J. J. MacIsaac. 1971. Some interactions of light and inorganic nitrogen in controlling nitrogen productivity in the sea. To be submitted for publication.
- Lorenzen, C. J. 1967. *Limnology and Oceanography*, 12:343-346.
- MacIsaac, J. J., and R. C. Dugdale. 1969. *Deep-Sea Research*, 16:45-57.
- Procházková, L. 1964. *Anal. Chem.*, 36:865-871.
- Wood, E. D., F. A. J. Armstrong, and F. A. Richards. 1967. *J. Mar. Biol. Assn. U.K.*, 47:23-31.

*Units*

Nutrient and particulate concentrations . . . . .	$\mu\text{g-At/liter}$
Chlorophyll and pheophytin . . . . .	$\mu\text{g/liter}$
Carbon-14 uptake . . . . .	$\mu\text{gC/liter/day}$
Uptake velocities (V) . . . . .	$\text{day}^{-1}$
Transport rate (RH) . . . . .	$\mu\text{g-At/liter-day}$
Incident radiation . . . . .	$\text{gm-cal/cm}^2/\text{day}$
Integrated nutrient and particulate concentrations. . . . .	$\text{mg-At/m}^2$
Integrated chlorophyll and pheophytin . . . . .	$\text{mg/m}^2$
Integrated carbon-14 uptake . . . . .	$\text{mgC/m}^2/\text{day}$
Integrated transport rates (RH) . . . . .	$\text{mg-At/m}^2/\text{day}$

NITROGEN PRODUCTIVITY CRUISE T1026 STATION 005  
 LATITUDE 29-32.0N LONGITUDE 117-16.0W LOCAL DATE 68/01/10 HOUR 9.0  
 ONE PERCENT LIGHT DEPTH 80 METERS TOTAL RADIATION

\*\*\* NUTRIENT DATA \*\*\*

DEPTH	NH4	NO3	PO4	SIO4	PERCENT IO
0		0.00			100
11		0.01			50
23		0.00			25
39		0.02			10

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEOP	PART. C	C14-UP.	PERCENT IO
0	0.05				100
11	0.04				50
23	0.04				25
39	0.05				10

\*\*\* NITROGEN DATA \*\*\*

DEPTH	VNH4	VNO3	PN	RHNH4	RHNO3	PERCENT IO
0		0.0000	0.56		0.000	100
11		0.0003	0.43		0.000	50
23		0.0000	0.35		0.000	25
39		0.0004	0.63		0.000	10

INTEGRATION: LIMITS NH4 TOTAL  
 0.0 TO 39.0 0.00 0.28 0.00 0.00 0.00 17.96 0.000  
 0.0 TO 39.0 0.00 0.01 0.00 0.00 0.00 0.46 0.000

NITROGEN PRODUCTIVITY CRUISE YTO26 STATION 007  
 LATITUDE 17-08.0N LONGITUDE 105-39.0W LOCAL DATE 68/01/15 HOUR 8.5  
 ONE PERCENT LIGHT DEPTH 86 METERS TOTAL RADIATION 410.

\*\*\* NUTRIENT DATA \*\*\*

DEPTH	NH4	NO3	PO4	SIO4	PERCENT IO
1		0.05			100
12		0.06			50
25		0.02			25
42		0.04			10
86		18.48			1

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEOP-P	PART. C	C14-UP.	PERCENT IO
1	0.06				100
12	0.05				50
25	0.05				25
42	0.05				10
86	0.15				1

\*\*\* NITROGEN DATA \*\*\*

DEPTH	VNH4	VNO3	PN	RHNH4	RMNO3	PERCENT IO
1		0.0104	0.87		0.009	100
12		0.0156	0.74		0.012	50
25		0.0034	0.87		0.003	25
42		0.0061	0.90		0.005	10
86		0.0449	0.75		0.034	1

INTEGRATION LIMITS NH4

NO3	PO4	SIO4	CHLORO-A	PHAEOP-P	PART. C	C14-UP.	PN	RHNH4	RMNO3
0.0 TO 42.0	0.00	0.00	2.16	0.00	0.00	0.00	35.23	0.000	0.288
0.0 TO 42.0	0.00	0.00	0.05	0.00	0.00	0.00	0.84	0.000	0.007
42.0 TO 86.0	0.00	0.00	4.40	0.00	0.00	0.00	36.30	0.000	0.862
42.0 TO 86.0	0.00	0.00	0.10	0.00	0.00	0.00	0.82	0.000	0.020
0.0 TO 86.0	0.00	0.00	6.56	0.00	0.00	0.00	71.53	0.000	1.150
0.0 TO 86.0	0.00	0.00	0.08	0.00	0.00	0.00	0.83	0.000	0.013

NITROGEN PRODUCTIVITY CRUISE TTC26 STATION 008  
 LATITUDE 16-05.0N LONGITUDE 103-22.0W LOCAL DATE 68/01/16 HOUR 9.0  
 ONE PERCENT LIGHT DEPTH 86 METERS TOTAL RADIATION 490.

\*\*\* NUTRIENT DATA \*\*\*

DEPTH	NH4	NO3	PO4	SIO4	PERCENT IO
1		0.05			100
12		0.00			50
25		0.07			25
42		0.42			10
86		16.21			1

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEOP	PART. C	C14-UP.	PERCENT IO
1	0.06				100
12	0.06				50
25	0.05				25
42	0.10				10
86	0.17				1

\*\*\* NITROGEN DATA \*\*\*

DEPTH	VNH4	VNO3	PN	RHNH4	RHNO3	PERCENT IO
1		0.0062	0.57		0.004	100
12		0.0000	0.46		0.000	50
25		0.0083	0.37		0.003	25
42		0.0550	0.45		0.025	10
86		0.0194	0.28		0.005	1

INTEGRATION LIMITS NH4

	NO3	PO4	SIO4	CHLORO-A	PHAEOP	PART.C	C14-UP.	PN	RHNH4	RHNO3
0.0 TO 42.0	4.94	0.00	0.00	2.71	0.00	0.00	0.00	18.60	0.000	0.279
0.0 TO 42.0	0.12	0.00	0.00	0.06	0.00	0.00	0.00	0.44	0.000	0.007
42.0 TO 86.0	365.86	0.00	0.00	5.94	0.00	0.00	0.00	16.06	0.000	0.664
42.0 TO 86.0	8.21	0.00	0.00	0.14	0.00	0.00	0.00	0.36	0.000	0.015
0.0 TO 86.0	370.80	0.00	0.00	8.65	0.00	0.00	0.00	14.66	0.000	0.943
0.0 TO 86.0	4.21	0.00	0.00	0.10	0.00	0.00	0.00	0.40	0.000	0.011

NITROGEN PRODUCTIVITY CRUISE T1026 STATION 015  
 LATITUDE 14-03.0N LONGITUDE 102-12.0W LOCAL DATE 68/01/22 HOUR 13.0  
 ONE PERCENT LIGHT DEPTH 45 METERS TOTAL RADIATION 518.

\*\*\* NUTRIENT DATA \*\*\*

DEPTH	NH4	NO3	PO4	SIO4	PERCENT IO
0	0.22	0.05			100
10		0.05			50
20	0.20	0.05			25
35	0.21	0.05			10
65	0.24	3.39			1

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEOP-P	PART. C	C14-UP.	PERCENT IO
0	0.10			7.8	100
10	0.11			4.2	50
20	0.13			10.0	25
35	0.18			21.6	10
65	0.44			0.0	1

\*\*\* NITROGEN DATA \*\*\*

DEPTH	VNH4	VNO3	PN	RHNH4	RHNO3	PERCENT IO
0	0.0393	0.0204	0.67	0.026	0.014	100
10		0.0154	0.73		0.011	50
20	0.0143	0.0286	0.56	0.008	0.016	25
35	0.0165	0.0326	0.59	0.010	0.019	10
65	0.0022	0.0606	0.52	0.001	0.032	1

INTEGRATION LIMITS NH4

0.0 TO	35.0	65.0	TO	NO3	PO4	SIO4	CHLORO-A	PHAEOP-P	PART. C	C14-UP.	PN	RHNH4	RHNO3
TOTAL	7.27			1.75	0.00	0.00	4.57	0.00	0.00	368.04	22.07	0.476	0.525
MEAN	0.21			0.05	0.00	0.00	0.13	0.00	0.00	10.56	0.63	0.014	0.015
TOTAL	6.75			51.60	0.00	0.00	9.30	0.00	0.00	324.04	16.65	0.163	0.761
MEAN	0.22			1.72	0.00	0.00	0.31	0.00	0.00	10.84	0.55	0.005	0.025
TOTAL	14.02			69.95	0.00	0.00	13.07	0.00	0.00	692.04	38.72	0.640	1.286
MEAN	0.22			0.92	0.00	0.00	0.21	0.00	0.00	10.69	0.60	0.010	0.320

NITROGEN PRODUCTIVITY CRUISE 11024 STATION 014  
 LATITUDE 11-25.0N LONGITUDE 099-52.0E LOCAL DATE 6R/01/24 HOUR 11.0  
 ONF PERCENT LIGHT DEPTH 22 METERS TOTAL RADIATION 468.

\*\*\* NUTRIENT DATA \*\*\*

DEPTH	NH4	NO3	PO4	SIO4	PERCENT IO
0	0.31	0.02			100
3	0.28	0.02			50
6	0.32	0.02			25
11	0.22	0.04			10
22	0.77	4.94			1

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEO-P	PART. C	C14-UP.	PERCENT IO
0	2.94			278.1	100
3	2.65			290.7	50
6	3.09			307.0	25
11	2.85			326.3	10
22	1.26			2.0	1

\*\*\* NITROGEN DATA \*\*\*

DEPTH	VNH4	VNO3	PN	RHNH4	RHNO3	PERCENT IO
0	0.0615	0.0002	5.19	0.319	0.001	100
3	0.0567	0.0002	5.70	0.323	0.001	50
6	0.0646	0.0002	4.73	0.306	0.001	25
11	0.0447	0.0002	5.13	0.229	0.001	10
22	0.0358	0.0145	2.30	0.092	0.033	1

INTEGRATION LIMITS

	NH4	NO3	PO4	SIO4	CHLORO-A	PHAEO-P	PART. C	C14-UP.	PN	RHNH4	RHNO3
0.0 TO 11.0	TOTAL 3.13	0.27	0.00	0.00	31.84	0.00	0.00	3333.04	56.63	3.244	0.011
0.0 TO 11.0	MEAN 0.28	0.02	0.00	0.00	2.89	0.00	0.00	303.04	5.15	0.295	0.001
11.0 TO 22.0	TOTAL 5.44	27.19	0.00	0.00	22.60	0.00	0.00	1805.69	40.86	1.714	0.189
11.0 TO 22.0	MEAN 0.49	2.49	0.00	0.00	2.05	0.00	0.00	164.20	3.71	0.155	0.017
0.0 TO 22.0	TOTAL 8.58	27.66	0.00	0.00	54.45	0.00	0.00	5138.70	97.49	4.958	0.200
0.0 TO 22.0	MEAN 0.39	1.26	0.00	0.00	2.47	0.00	0.00	233.62	4.43	0.225	0.009

NITROGEN PRODUCTIVITY CRUISE Y026 STATION 018  
LATITUDE 13-09.0N LONGITUDE 098-32.0E  
ONE PERCENT LIGHT DEPTH 78 METERS

\*\*\* WUTSLEY CAT \*\*\*

WATER	PERCENT	10
0	0.08	100
12	0.08	50
24	0.14	25
39	0.25	10
78	32.17	1

\*\*\* CAPUCH DATA \*\*\*

DEPTH	CHLORO-A	PHAEO-B	PART. C	CL-UP.	PERCENT IC
0	C.08				100
12	C.10				50
24	C.11				25
39	C.44				10
78	C.04				

\*\*\* NITROGEN DATA \*\*\*

DEPTH	V4M6	V4C3	P4	R4M4	R4M3	PERCENT IC
0	0.0342	0.0009	0.29	0.010	0.000	100
12	0.0504	0.0020	0.39	0.020	0.001	50
24	0.0420	0.0049	0.80	0.034	0.004	25
39	0.0212	0.0344	0.96	0.020	0.033	10
76		0.0292	0.37		0.011	1

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NITROGEN PRODUCTIVITY CRUISE 11024 STATION 020 LOCAL DATE 68/01/26 HOUR 9.0  
 LATITUDE 14-41.0N LONGITUDE 086-51.0W  
 ONE PERCENT LIGHT DEPTH 52 METERS TOTAL RADIATION 533.

\*\*\* CARBON DATA \*\*\*  
 CHLORO-A PHAEO-P PART. C C14-UP. PERCENT IC  
 0.54 40.4 100  
 0.54 75.6 50  
 0.42 57.8 25  
 0.36 60.5 10  
 0.21 0.0 1

INTEGRATION LIMITS NH4		103	P04	S104	CHLORO-A PHAEO-P	PART. C C14-UP.	PN	RHNM4	RHNM3
0.0 TO	26.0	0.00	0.00	0.00	12.06	0.00	0.00	0.000	0.000
	TOTAL	0.00	0.00	0.00	0.46	0.00	0.00	0.000	0.000
0.0 TO	26.0	0.00	0.00	0.00	7.41	0.00	0.00	0.000	0.000
	TOTAL	0.00	0.00	0.00	0.28	0.00	0.00	0.000	0.000
26.0 TO	52.0	0.00	0.00	0.00	19.47	0.00	0.00	0.000	0.000
	TOTAL	0.00	0.00	0.00	0.37	0.00	0.00	0.000	0.000
26.0 TO	52.0	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000
	TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000
52.0 TO	52.0	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000
	TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000

NITROGEN PRODUCTIVITY CRUISE TT026 STATION 024

LATITUDE 16-00.0N LONGITUDE 095-12.0W LOCAL DATE 6A/01/27 HOUR 9.8  
ONE PERCENT LIGHT DEPTH 23 METERS TOTAL RADIATION

\*\*\* NUTRIENT DATA \*\*\*

DEPTH	NH4	NO3	PO4	SIO4	PERCENT IO
0	0.24	2.70			100
3	0.34	2.83			50
6	0.15	3.04			25
10	0.29	3.29			10
23		7.09			1

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEOP	PART. C	CL14-UP.	PERCENT IC
0	5.49			439.8	100
3	4.12			439.8	50
6	3.83			439.8	25
10	3.24			424.3	10
23	2.70			6.9	1

\*\*\* NITROGEN DATA \*\*\*

DEPTH	VNH4	VNO3	PH	RMNH4	RMNO3	PERCENT IO
0	0.0390	0.2426	3.83	0.149	0.929	100
3	0.0356	0.2369	4.20	0.150	0.995	50
6	0.0234	0.2724	4.35	0.102	1.185	25
10	0.0545	0.2213	2.57	0.195	0.790	10
23		0.0163	2.46		0.040	1

INTEGRATION LIMITS	NH4	NO3	PO4	SIO4	CHLORO-A	PHAEOP	PART. C	CL14-UP.	PH	RMNH4	RMNO3
0.0 TO 10.0	2.48	29.76	0.00	0.00	40.48	0.00	0.00	4367.04	40.71	1.418	10.106
0.0 TO 10.0	0.25	2.98	0.00	0.00	4.05	0.00	0.00	436.74	4.07	0.142	1.011
10.0 TO 23.0	3.77	67.47	0.00	0.00	38.61	0.00	0.00	2802.84	39.19	1.265	5.396
10.0 TO 23.0	0.29	5.19	0.00	0.00	2.97	0.00	0.00	215.64	3.01	0.097	0.415
0.0 TO 23.0	6.25	97.23	0.00	0.00	79.09	0.00	0.00	7169.84	79.90	2.693	15.502
0.0 TO 23.0	0.27	4.23	0.00	0.00	3.44	0.00	0.00	311.79	3.67	0.117	0.674

NITROGEN PRODUCTIVITY CRUISE TT026 STATION 025  
 LATITUDE 13-58.0N LONGITUDE 093-30.0W LOCAL DATE 08/31/20 HOUR 13.8  
 ONE PERCENT LIGHT DEPTH 37 METERS TOTAL RADIATION 511.

\*\*\* NUTRIENT DATA \*\*\*

DEPTH	NH4	NO3	PO4	SIO4	PERCENT IO
0	0.33	0.92			100
5	0.22	1.12			50
9	0.19	0.75			25
15	0.32	11.94			10
37	0.38	34.50			1

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEO-P	PART. C	C14-UP.	PERCENT IO
0	0.92			214.8	100
5	0.62			256.6	50
9	1.19			293.9	25
15	0.96			73.9	10
37	0.12			0.8	1

\*\*\* NITROGEN DATA \*\*\*

DEPTH	VNH4	VNO3	PN	RNH4	RNH3	PERCENT IO
0	0.0409	0.1062	3.49	0.213	0.371	100
5	0.0430	0.1322	3.72	0.160	0.492	50
9	0.0397	0.1002	3.83	0.152	0.384	25
15	0.0592	0.1097	1.87	0.126	0.200	10
37	0.0308	0.0475	1.10	0.034	0.052	1

INTERPOLATION LIMITS NH4		NO3	PO4	SIO4	CHLORO-A	PHAEO-P	PART. C	C14-UP.	PN	RNH4	RNH3
0.0 TO	15.0	46.91	0.00	0.00	13.97	0.00	0.00	3382.94	50.07	2.389	5.657
0.0 TO	15.0	3.13	0.00	0.00	0.93	0.00	0.00	225.57	3.36	0.159	0.377
15.0 TO	37.0	510.84	0.00	0.00	11.88	0.00	0.00	821.74	32.12	1.752	2.771
15.0 TO	37.0	27.22	0.00	0.00	0.54	0.00	0.00	37.29	1.46	0.287	0.126
0.0 TO	37.0	567.75	0.00	0.00	25.80	0.00	0.00	4204.64	82.19	4.127	8.228
0.0 TO	37.0	3.21	0.00	0.00	0.71	0.00	0.00	113.68	2.22	0.112	0.225

NITROGEN PRODUCTIVITY CRUISE 11026 STATION 028 NO3 UPTAKE SUPPRESSION  
 LATITUDE 13-02.0N LONGITUDE 091-49.0W LOCAL DATE 6/1/80 HOUR 9.2  
 ONE PRCENT LIGHT DEPTH 60 METERS TOTAL RADIATION 612.9

\*\*\* NUTRIENT DATA \*\*\*

DEPTH	NH4	NO3	PO4	SIO4	PERCENT IO
0	1.01	1.09			100
9	0.93	1.00			50
18	1.27	1.87			25
30	1.43	1.00			10
60	0.50	31.63			1

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEOP	PART. C	C14-UP.	PERCENT IO
0	0.21			23.8	100
9	0.24			26.6	50
18	0.26			33.0	25
30	0.19			26.8	10
60	0.18			0.0	1

\*\*\* NITROGEN DATA \*\*\*

DEPTH	VNH4	VNO3	PN	RHNH4	RHNO3	PERCENT IO
0	0.1370	0.0155	1.27	0.174	0.020	100
9	0.1132	0.0109	1.86	0.211	0.020	50
18	0.1430	0.0148	1.06	0.152	0.016	25
30	0.1302	0.0067	1.31	0.171	0.009	10
60	0.0379	0.0397	0.46	0.017	0.018	1

INTEGRATION LIMITS	NH4	NO3	PO4	SIO4	CHLORO-A	PHAEOP	PART. C	C14-UP.	PN	RHNH4	RHNO3
0.0 TO 30.0	34.83	39.54	0.00	0.00	6.97	0.00	0.00	853.84	41.44	5.293	0.488
MEAN	1.16	1.32	0.00	0.00	0.23	0.00	0.00	28.50	1.38	0.176	0.016
30.0 TO 60.0	28.95	48.45	0.00	0.00	5.55	0.00	0.00	402.04	26.55	2.820	0.406
MEAN	0.96	16.31	0.00	0.00	0.18	0.00	0.00	13.44	0.88	0.094	0.014
60.0 TO 90.0	63.78	528.09	0.00	0.00	12.52	0.00	0.00	1255.84	67.99	8.113	0.894
MEAN	1.06	8.82	0.00	0.00	0.21	0.00	0.00	20.97	1.13	0.135	0.015

NITROGEN PRODUCTIVITY CRUISE TT026 STATION 030 LOCAL DATE 68/01/31 HOUR 1.2  
 LATITUDE 10-53.0N LONGITUDE 093-24.0W  
 ONE PERCENT LIGHT DEPTH 46 METERS TOTAL RADIATION 482.0

\*\*\* NUTRIENT DATA \*\*\*

DEPTH	NH4	NO3	PO4	SIO4	PERCENT IO
0	0.33	0.04			100
4	0.27	0.04			50
8	0.15	0.06			25
19	0.20	0.09			10
46		0.08			1

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	CHLORO-P	PART. C	CL4-UP.	PERCENT IO
0	0.31				100
4	0.46				50
8	0.31				25
19	0.34				10
46	0.52				1

\*\*\* NITROGEN DATA \*\*\*

DEPTH	VNH4	VNO3	PN	RHNH4	RHNO3	PERCENT IO
0	0.1196	0.0132	1.10	0.132	0.015	100
4	0.1232	0.0128	1.16	0.143	0.015	50
8	0.0632	0.0204	1.65	0.104	0.034	25
19	0.0969	0.0288	0.95	0.092	0.027	10
46		0.0088	1.33		0.012	1

INTEGRATION LIMITS NH4

0.0 TO	19.0	TOTAL	NO3	PO4	SIO4	CHLORO-A	CHLORO-P	PART. C	CL4-UP.	PN	RHNH4	RHNO3
0.0 TO	19.0	3.96	1.18	0.00	0.00	6.65	0.00	0.00	0.00	24.44	2.123	0.491
0.0 TO	19.0	MFAN 0.21	0.06	0.00	0.00	0.35	0.00	0.00	0.00	1.29	0.112	0.026
19.0 TO	46.0	TOTAL 5.60	2.29	0.00	0.00	11.61	0.00	0.00	0.00	30.78	1.243	0.527
19.0 TO	46.0	MFAN 0.20	0.08	0.00	0.00	0.43	0.00	0.00	0.00	1.14	0.046	0.020
0.0 TO	46.0	TOTAL 9.36	3.48	0.00	0.00	18.26	0.00	0.00	0.00	55.22	3.366	1.019
0.0 TO	46.0	MFAN 0.20	0.08	0.00	0.00	0.40	0.00	0.00	0.00	1.20	0.073	0.022

NITROGEN PRODUCTIVITY CRUISE T1026 STATION 032 NO3 UPTAKE SUPPRESSION  
 LATITUDE 09-58.0N LONGITUDE 093-22.0W LOCAL DATE 68/02/01 HOUR 10.0C  
 ONE PERCENT LIGHT DEPTH 58 METERS TOTAL RADIATION 546.

\*\*\* NUTRIENT DATA \*\*\*

DEPTH	NH4	NO3	PO4	SIO4	PERCENT IO
0	0.46	0.33			100
9	0.39	0.28			50
17	0.58	0.31			25
29	0.94	2.44			10
58	0.06	21.99			1

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEOP	PART. C	C14-UP.	PERCENT IO
0	0.14			25.5	100
9	0.32			54.4	50
17	0.34			60.1	25
29	0.70				10
58	0.14			0.0*	1

\*\*\* NITROGEN DATA \*\*\*

DEPTH	VNH4	VNO3	PN	RHNH4	RHNO3	PERCENT IO
0	0.0846	0.0318	1.09	0.092	0.035	100
9	0.0763	0.0235	1.56	0.119	0.037	50
17	0.0966	0.0183	1.27	0.123	0.023	25
29	0.0881	0.0302	0.97	0.085	0.029	10
58	0.0255	0.0472	0.56	0.014	0.026	1

INTEGRATION LIMITS	NH4	NO3	PO4	SIO4	CHLORO-A	PHAEOP	PART. C	C14-UP.	PN	RHNH4	RHNO3
0.0 TO 29.0	16.82	21.60	0.00	0.00	10.95	0.00	0.00	1433.25	36.68	3.166	0.876
MEAN											
0.0 TO 29.0	0.58	0.74	0.00	0.00	0.38	0.00	0.00	49.47	1.26	0.109	0.330
TOTAL											
29.0 TO 58.0	14.50	354.73	0.00	0.00	12.18	0.00	0.00	616.44	22.18	1.446	0.808
MEAN											
29.0 TO 58.0	0.50	12.21	0.00	0.00	0.42	0.00	0.00	21.30	0.76	0.050	0.028
TOTAL											
0.0 TO 58.0	31.32	175.84	0.00	0.00	23.13	0.00	0.00	2047.64	58.87	4.612	1.634
MEAN											
0.0 TO 58.0	0.56	6.48	0.00	0.00	0.40	0.00	0.00	35.38	1.01	0.080	0.029

NITROGEN PRODUCTIVITY CRUISE T1026 STATION 034  
 LATITUDE 09-56.0N LONGITUDE 091-15.0W LOCAL DATE 68/02/02 HOUR 9.0  
 ONE PERCENT LIGHT DEPTH 39 METERS TOTAL RADIATION

\*\*\* NUTRIENT DATA \*\*\*

DEPTH	NH4	NO3	PO4	SIO4	PERCENT IO
0	0.63	9.17			100
5	0.54	9.21			50
10	0.66	9.30			25
16	0.72	9.96			10
39		18.16			1

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEOP	PART. C	C14-UP.	PERCENT IO
0	0.80			57.3	100
5	0.77			112.4	50
10	0.80			95.9	25
16	0.74			82.9	10
39	0.56			3.7	1

\*\*\* NITROGEN DATA \*\*\*

DEPTH	VNH4	VNO3	PN	RHNM4	RHNO3	PERCENT IO
0	0.1040	0.1144	3.97	0.413	0.454	100
5	0.0970	0.1500	2.44	0.237	0.366	50
10	0.0966	0.1317	2.85	0.275	0.375	25
16	0.0850	0.0527	2.52	0.214	0.148	10
39		0.0358	1.62		0.065	1

INTEGRATION LIMITS		NH4	NO3	PO4	SIO4	CHLORO-A	PHAEOP	PART. C	C14-UP.	PN	RHNM4	RHNO3
0.0 TO	16.0	TOTAL	10.06	0.00	0.00	12.47	0.00	0.00	1481.44	45.36	4.372	5.474
0.0 TO	16.0	MEAN	0.63	0.00	0.00	0.78	0.00	0.00	92.63	2.83	0.273	0.342
16.0 TO	39.0	TOTAL	16.56	0.00	0.00	14.95	0.00	0.00	995.94	49.91	2.463	2.450
16.0 TO	39.0	MEAN	0.72	0.00	0.00	0.65	0.00	0.00	43.34	2.17	0.107	0.107
0.0 TO	39.0	TOTAL	26.62	0.00	0.00	27.42	0.00	0.00	2477.34	95.27	6.836	7.924
0.0 TO	39.0	MEAN	0.68	0.00	0.00	0.70	0.00	0.00	53.57	2.44	0.175	0.203

NITROGEN PRODUCTIVITY CRUISE T1026 STATION 036 NO3 UPTAKE SUPPRESSION  
 LATITUDE 10-06.0N LONGITUDE 089-26.0W LOCAL DATE 08/02/03 HOUR 11.8  
 ONE PERCENT LIGHT DEPTH 54 METERS TOTAL RADIATION 626.0

\*\*\* NUTRIENT DATA \*\*\*

DEPTH	NH4	NO3	PO4	SIO4	PERCENT IO
0	0.48	16.15			100
8	0.46	16.06			50
16	0.45	16.09			25
27	0.45	15.61			10
54	0.46	29.18			1

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEO-P	PART. C	C14-UP.	PERCENT IO
0	0.20				100
8	0.19				50
16	0.28				25
27	0.30				10
54	0.31				1

\*\*\* NITROGEN DATA \*\*\*

DEPTH	VNH4	VNO3	PN	RHNM4	RHNO3	PERCENT IO
0	0.0724	0.0419	1.99	0.144	0.083	100
8	0.0692	0.0361	1.85	0.128	0.067	50
16	0.0643	0.0222	1.81	0.116	0.040	25
27	0.0834	0.0311	2.53	0.211	0.079	10
54	0.0440	0.0360	1.83	0.081	0.066	1

INTEGRATION LIMITS		NH4	NO3	PO4	SIO4	CHLORO-A	PHAEO-P	PART. C	C14-UP.	PN	RHNM4	RHNO3
0.0 TO	27.0	12.35	431.79	0.00	0.00	6.63	0.00	0.00	0.00	53.87	3.867	1.682
0.0 TO	27.0	0.66	15.99	0.00	0.00	0.25	0.00	0.00	0.00	2.00	0.143	0.062
27.0 TO	54.0	12.28	604.66	0.00	0.00	8.23	0.00	0.00	0.00	58.86	3.936	1.952
27.0 TO	54.0	0.45	72.39	0.00	0.00	0.30	0.00	0.00	0.00	2.18	0.146	0.072
0.0 TO	54.0	24.63	1036.45	0.00	0.00	14.86	0.00	0.00	0.00	112.73	7.802	3.634
0.0 TO	54.0	0.46	19.19	0.00	0.00	0.28	0.00	0.00	0.00	2.09	0.144	0.057



NITROGEN PRODUCTIVITY CRUISE T1026 STATION 03P  
 LATITUDE 10-04.0N LONGITUDE 088-15.0W LOCAL DATE 6/8/02/04 HOUR 10.0  
 ONE PERCENT LIGHT DEPTH 20 METERS TOTAL RADIATION 511.8

\*\*\* NUTRIENT DATA \*\*\*

DEPTH	NH4	NO3	PO4	SIO4	PERCENT IO
0		0.12			100
3		0.11			50
5		0.10			25
9		0.09			10
20		0.39			1

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEO-P	PART. C	C14-UP.	PERCENT IO
0	4.12			213.5	100
3	4.22			400.0	50
5	6.27			257.8	25
9	4.41			197.2	10
20	5.73			10.8	1

\*\*\* NITROGEN DATA \*\*\*

DEPTH	VNH4	VNO3	PN	RHNH4	RHNO3	PERCENT IO
0		0.0399	4.32		0.172	100
3		0.0355	4.66		0.165	50
5		0.0327	4.15		0.136	25
9		0.0289	4.40		0.127	10
20		0.0237	4.42		0.105	1

INTEGRATION LIMITS		NH4	NO3	PO4	SIO4	CHLORO-A	PHAEO-P	PART. C	C14-UP.	PN	RHNH4	RHNO3
0.0 TO	9.0	TOTAL	0.93	0.00	0.00	44.36	0.00	0.00	2488.09	39.38	0.000	1.334
0.0 TO	9.0	MEAN	0.10	0.00	0.00	4.93	0.00	0.00	276.49	4.38	0.000	0.148
9.0 TO	20.0	TOTAL	2.64	0.00	0.00	55.77	0.00	0.00	1144.04	48.51	0.000	1.276
9.0 TO	20.0	MEAN	0.24	0.00	0.00	5.07	0.00	0.00	104.04	4.41	0.000	0.116
20.0 TO	20.0	TOTAL	3.57	0.00	0.00	100.13	0.00	0.00	1632.09	87.89	0.000	2.609
20.0 TO	20.0	MEAN	0.18	0.00	0.00	5.01	0.00	0.00	181.65	4.39	0.000	0.130

NITROGEN PRODUCTIVITY CRUISE T1026 STATION 041  
 LATITUDE 08-54.0N LONGITUDE 087-50.0W LOCAL DATE 68/02/11 HOUR 14.6  
 ONE PERCENT LIGHT DEPTH 47 METERS TOTAL RADIATION

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEOP	PART. C	C14-UP.	PERCENT 10
0	0.18			39.8	100
9	0.32			65.5	50
16	0.57			19.2	25
24	0.51				10
47	0.06			0.7	1

INTEGRATION LIMITS NH4

	NO3	PO4	SI04	CHLORO-A	PHAEOP	PART.C	C14-UP.	PN	RHNO3	RHNO4
0.0 TO 24.0 TOTAL	0.00	0.00	0.00	9.68	0.00	0.00	904.85	0.00	0.000	0.000
0.0 TO 24.0 MEAN	0.00	0.00	0.00	0.40	0.00	0.00	37.75	0.00	0.000	0.000
24.0 TO 47.0 TOTAL	0.00	0.00	0.00	6.55	0.00	0.00	173.99	0.00	0.000	0.000
24.0 TO 47.0 MEAN	0.00	0.00	0.00	0.29	0.00	0.00	7.61	0.00	0.000	0.000
0.0 TO 47.0 TOTAL	0.00	0.00	0.00	16.24	0.00	0.00	1078.79	0.00	0.000	0.000
0.0 TO 47.0 MEAN	0.00	0.00	0.00	0.35	0.00	0.00	23.00	0.00	0.000	0.000

# NITROGEN PRODUCTIVITY CRUISE Y026 STATION 050

LATITUDE 08-55.0N LONGITUDE 089-34.0W LOCAL DATE 68/02/14 HOUR 17.6  
 ONE PERCENT LIGHT DEPTH 62 METERS TOTAL RADIATION

## \*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEO-P	PART. C	C14-UP.	PERCENT IO
0	0.33			142.9	100
11	0.39			122.8	50
20	0.47			76.2	25
32	0.47				10
62	0.23			2.2	1

INTEGRATION LIMITS NH4		NO3	PO4	SIO4	CHLORO-A	PHAEO-P	PART. C	C14-UP.	PN	RHNM4	RHNG3
0.0 TO	32.0	0.00	0.00	0.00	13.47	0.00	0.00	3144.44	0.00	0.000	0.000
	MEAN										
0.0 TO	32.0	0.00	0.00	0.00	0.42	0.00	0.00	98.31	0.00	0.000	0.000
	MEAN										
32.0 TO	62.0	0.00	0.00	0.00	10.50	0.00	0.00	852.90	0.00	0.000	0.000
	MEAN										
32.0 TO	62.0	0.00	0.00	0.00	0.35	0.00	0.00	28.67	0.00	0.000	0.000
	MEAN										
0.0 TO	62.0	0.00	0.00	0.00	23.97	0.00	0.00	4003.29	0.00	0.000	0.000
	MEAN										
0.0 TO	62.0	0.00	0.00	0.00	0.39	0.00	0.00	64.61	0.00	0.000	0.000
	MEAN										

NITROGEN PRODUCTIVITY CRUISE TT026 STATION 057

LATITUDE 08-53.0N LONGITUDE 088-50.0W

LOCAL DATE 68/02/17 HOUR 11.8

ONF PERCENT LIGHT DEPTH 32 METERS

TOTAL RADIATION

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEO-P	PART. C	C14-UP.	PERCENT IO
0	0.73			181.8	100
4	0.89			211.4	50
8	0.76			78.9	25
14	0.78			67.0	10
32	0.60			0.8	1

INTEGRATION LIMITS NH4

	NO3	PO4	SIC4	CHLORO-A	PHAEO-P	PART.C	C14-UP.	PN	RHNH4	RHNO3
0.0 TO 14.0	0.00	0.00	0.00	11.16	0.00	0.00	1804.74	0.00	0.000	0.000
MEAN	0.00	0.00	0.00	0.80	0.00	0.00	128.95	0.00	0.000	0.000
0.0 TO 14.0	0.00	0.00	0.00	12.42	0.00	0.00	610.24	0.00	0.000	0.000
TOTAL	0.00	0.00	0.00	0.69	0.00	0.00	33.94	0.00	0.000	0.000
MEAN	0.00	0.00	0.00	23.58	0.00	0.00	2414.94	0.00	0.000	0.000
0.0 TO 32.0	0.00	0.00	0.00	0.74	0.00	0.00	75.51	0.00	0.000	0.000
TOTAL	0.00	0.00	0.00							
MEAN	0.00	0.00	0.00							

NITROGEN PRODUCTIVITY CRUISE T1026 STATION 062

LATITUDE 08-34.0N LONGITUDE 089-26.0W LOCAL DATE 68/02/19 HOUR 16.6  
ONE PERCENT LIGHT DEPTH 37 METERS TOTAL RADIATION

\*\*\* CARBON DATA \*\*\*

DEPTH	CHLORO-A	PHAEO-P	PART. C	C14-UP.	PERCENT IO
0	0.34			41.5	100
7	0.53			61.7	50
12	0.63			61.5	25
19	0.68			39.5	10
37	1.02			19.9	1

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INTEGRATION LIMITS	NH4	NO3	PO4	SIO4	CHLORO-A	PHAEO-P	PART.C	C14-UP.	PN	RHNM4	RHNO3
0.0 TO 19.0	TOTAL	0.00	0.00	0.00	10.53	0.00	0.00	1022.74	0.00	0.000	0.000
0.0 TO 19.0	MEAN	0.00	0.00	0.00	0.55	0.00	0.00	53.87	0.00	0.000	0.000
19.0 TO 37.0	TOTAL	0.00	0.00	0.00	15.30	0.00	0.00	534.64	0.00	0.000	0.000
19.0 TO 37.0	MEAN	0.00	0.00	0.00	0.85	0.00	0.00	29.74	0.00	0.000	0.000
0.0 TO 37.0	TOTAL	0.00	0.00	0.00	25.83	0.00	0.00	1557.34	0.00	0.000	0.000
0.0 TO 37.0	MEAN	0.00	0.00	0.00	0.70	0.00	0.00	42.13	0.00	0.000	0.000

NITROGEN PRODUCTIVITY CRUISE TT026 STATION 068

LATITUDE 08-53.0N LONGITUDE 088-24.0W LOCAL DATE 68/02/22 HOUR 10.0

ONE PERCENT LIGHT DEPTH 50 METERS TOTAL RADIATION

\*\*\* CARRON DATA \*\*\*

DEPTH	CHLORO-A	PHAEOP-P	PART. C	C14-UP.	PERCENT IO
0	0.19			33.6	100
8	0.20			66.5	50
16	0.35			50.3	25
26	0.15			5.8	10
50	0.16			0.0	1

INTEGRATION LIMITS	NH4	NO3	PO4	SIO4	CHLORO-A	PHAEOP-P	PART.C	C14-UP.	PN	RMNH4	RMNO3
0.0 TO 26.0	TOTAL	0.00	0.00	0.00	6.26	0.00	0.00	1148.14	0.00	0.000	0.000
0.0 TO 26.0	MEAN	0.00	0.00	0.00	0.24	0.00	0.00	44.20	0.00	0.000	0.000
26.0 TO 50.0	TOTAL	0.00	0.00	0.00	3.72	0.00	0.00	69.64	0.00	0.000	0.000
26.0 TO 50.0	MEAN	0.00	0.00	0.00	0.15	0.00	0.00	2.94	0.00	0.000	0.000
0.0 TO 50.0	TOTAL	0.00	0.00	0.00	9.98	0.00	0.00	1217.74	0.00	0.000	0.000
0.0 TO 50.0	MEAN	0.00	0.00	0.00	0.20	0.00	0.00	24.40	0.00	0.000	0.000

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